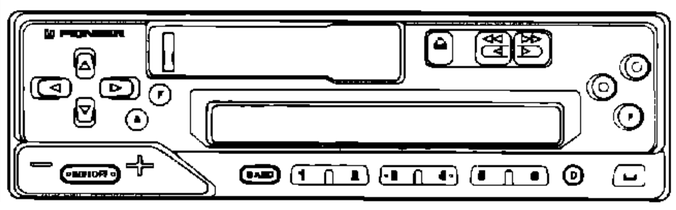
Service Manual

PIONEER®
The Art of Entertainment

• KEH-P26R/X1M/GR



ORDER NO.
CRT1989

MULTI-CD CONTROL HIGH POWER CASSETTE RDS TUNER

KEH-P26R X1M/GR

HIGH POWER CASSETTE RDS TUNER

KEH-2520R X1M/GR

NOTE:

- **See the separate manual CX-644(CRT1800) for the cassette mechanism description.**
- **The cassette mechanism assy employed in this model is one of X-2M series**
- **This model has no CD test mode.**
  For the operations in the CD test mode, refer to the CD player's Service Manual.

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PIONEER ELECTRONIC CORPORATION 4-1, Meguro 1-Chome, Meguro-ku, Tokyo 153, Japan
PIONEER ELECTRONICS SERVICE INC. P.O.Box 1760, Long Beach, CA 90801-1760 U.S.A.
PIONEER ELECTRONIC [EUROPE] N.V. Haven 1087 Keetberglaan 1, 9120 Melsele, Belgium
PIONEER ELECTRONICS ASIACENTRE PTE.LTD. 501 Orchard Road, #10-00, Lane Crawford Place, Singapore 0923

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1. SAFETY INFORMATION

This service manual is intended for qualified service technicians; it is not meant for the casual do-it-yourselfer.
Qualified technicians have the necessary test equipment and tools, and have been trained to properly and safely repair complex products such as those covered by this manual.
Improperly performed repairs can adversely affect the safety and reliability of the product and may void the warranty.
If you are not qualified to perform the repair of this product properly and safely, you should not risk trying to do so and refer the repair to a qualified service technician.

2. EXPLODED VIEWS AND PARTS LIST

2.1 PACKING

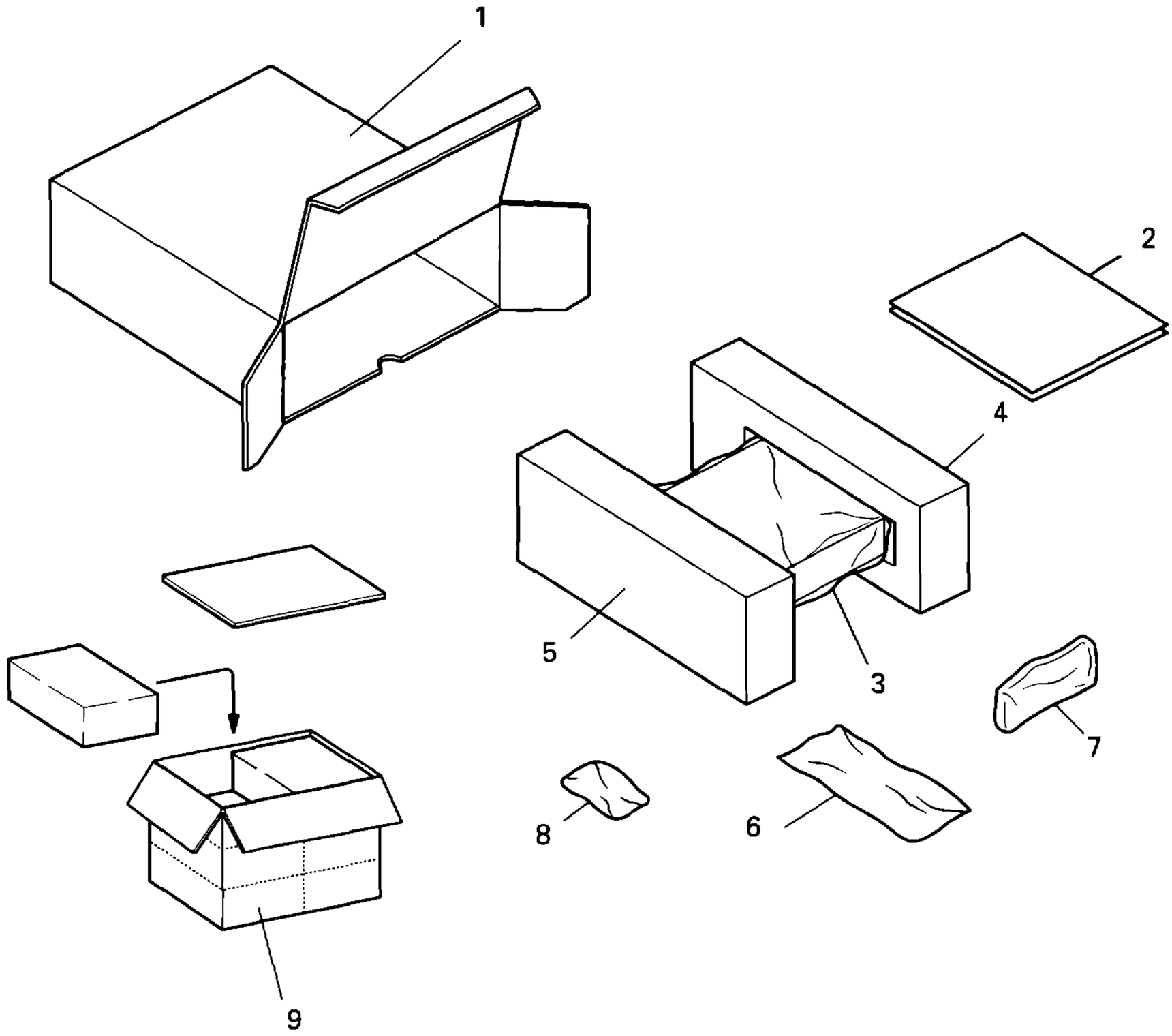


Fig. 1

NOTE:

- Parts marked by " * "are generally unavailable because they are not in our Master Spare Parts List.
- Screws adjacent to ▼ mark on the product are used for disassembly.

- **Parts List**

Mark	No.	Description	KEH-P26R/X1M/GR Part No.	KEH-2520R/X1M/GR Part No.
	1	Carton	CHG3170	CHG3174
	2-1	Owner's Manual	CRB1390	CRB1392
	2-2	Installation Manual	CRB1391	CRB1393
*	2-3	Warranty Card	CRY1087	CRY1087
*	2-4	Passport	CRY1013	.....
	3	Polyethylene Bag	CEG-162	CEG-162
	4	Protector	CHP1622	CHP1622
	5	Protector	CHP1623	CHP1623
	6	Cord Assy	CDE5286	CDE5342
	7	Case Assy	CXB1063	CXB1063
	8	Accessory Assy	CEA1917	CEA1917
	9	Contain Box	CHL3170	CHL3174

● Owner's Manual, Installation Manual

Model	Part No.	Language
KEH-P26R/X1M/GR	CRB1390	German
	CRB1391	German
KEH-2520R/X1M/GR	CRB1392	German
	CRB1393	German

● Accessory Assy

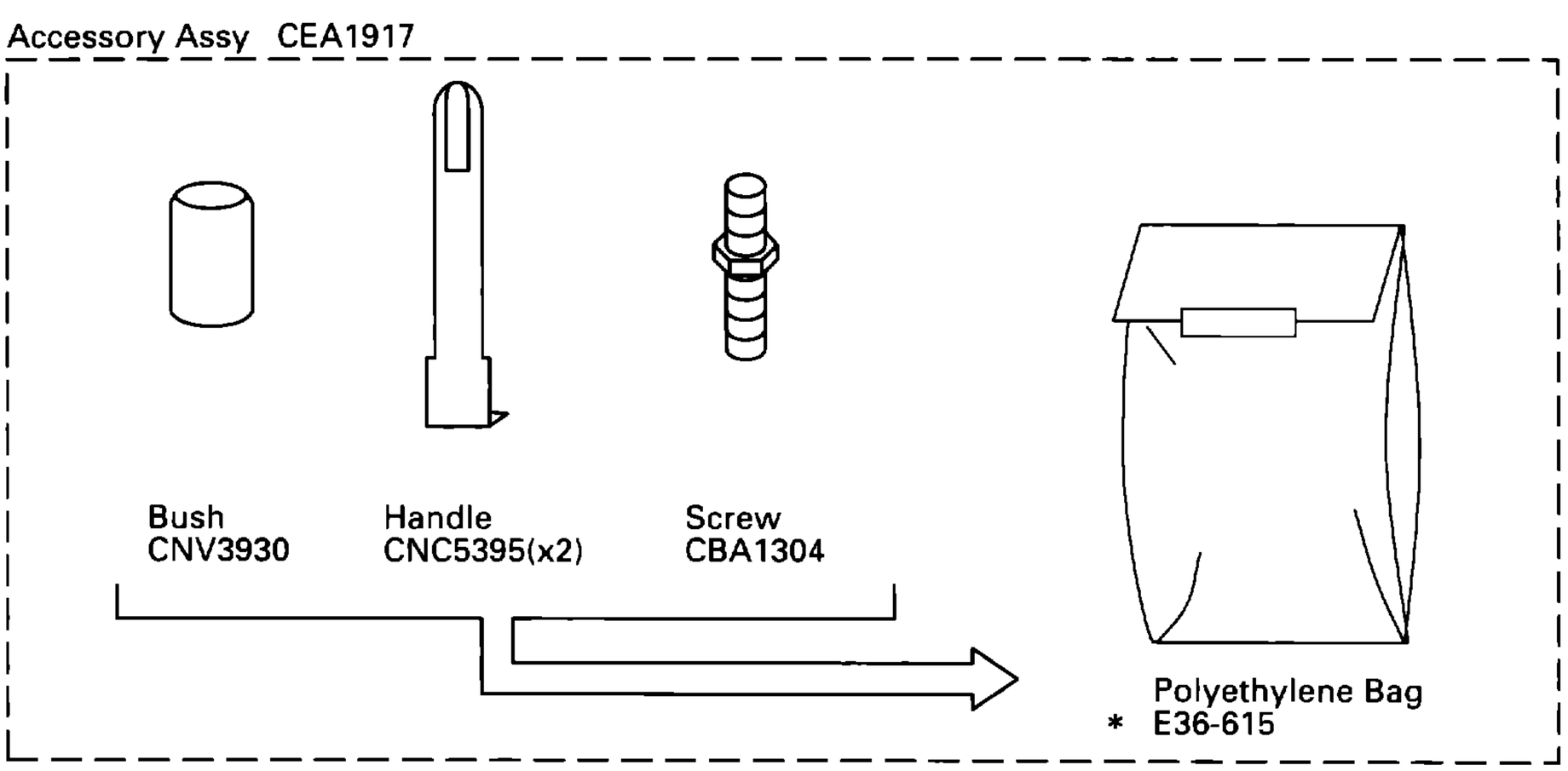


Fig. 2

2.2 EXTERIOR

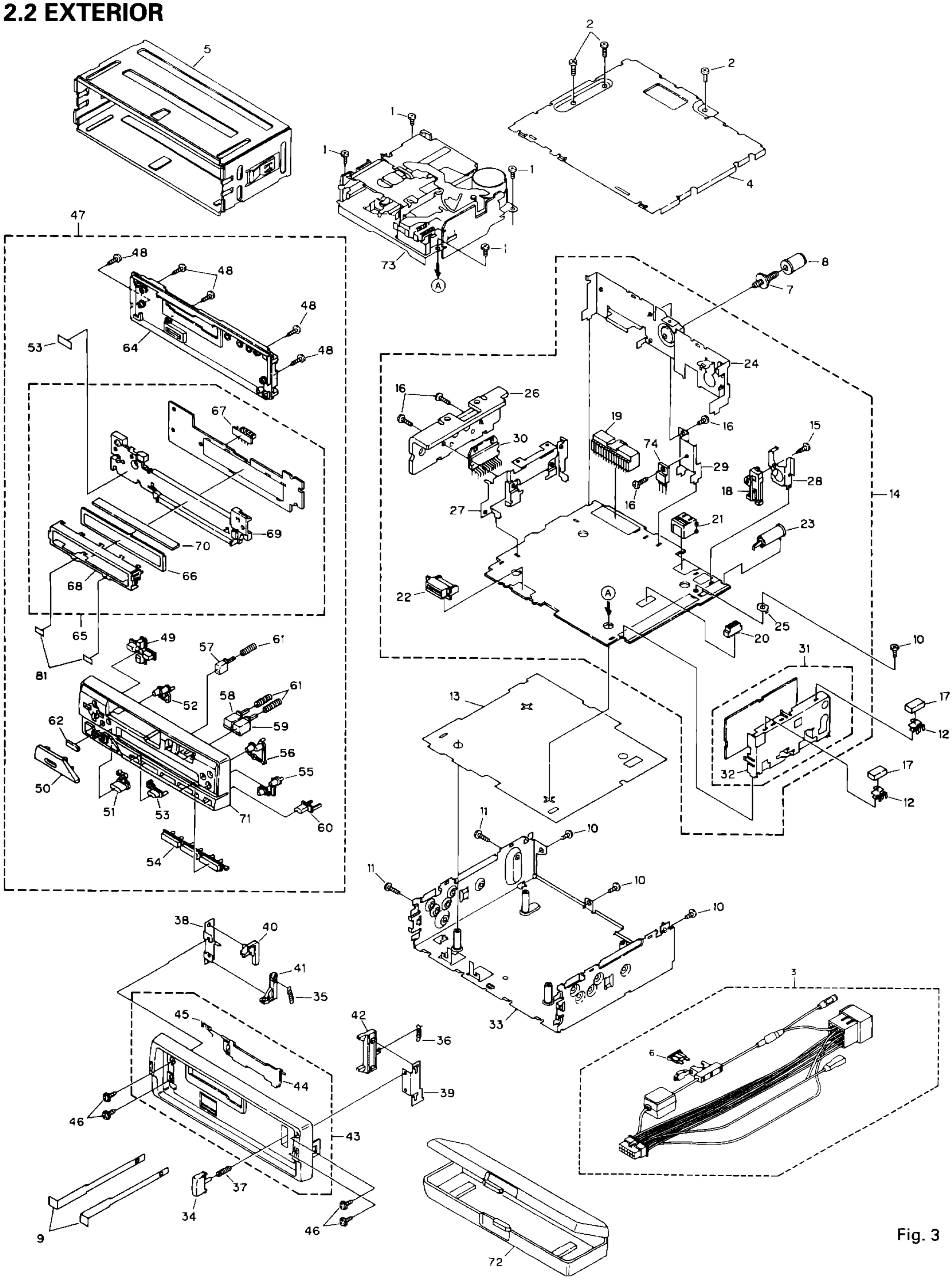


Fig. 3

● Parts List(KEH-P26R/X1M/GR)

Mark No.	Description	Part No.
1	Screw	BSZ26P050FMC
2	Screw	BSZ30P100FMC
3	Cord Assy	CDE5286
4	Case	CNB2074
5	Holder	CNC5394
6	Fuse(10A)	CEK1136
7	Screw	CBA1304
8	Bush	CNV3930
9	Handle	CNC5395
10	Screw	BSZ30P060FMC
11	Screw	BSZ30P100FMC
12	Holder	CNC5704
13	Insulator	CNM5025
14	Tuner Amp Unit	CWM5173
15	Screw	BPZ26P080FMC
16	Screw	BSZ26P080FMC
17	Cushion	CNM4870
18	Pin Jack(CN401)	CKB1028
19	Plug(CN601)	CKM1226
20	Connector(CN604)	CKS3362
21	Connector(CN602)	CKS3408
22	Connector(CN603)	CKS3581
23	Antenna Jack(CN301)	CKX1056
24	Panel	CNB2109
25	Holder	CNC5399
26	Heat Sink	CNC6217
27	Holder	CNC6372
28	Holder	CNC6531
29	Holder	CNC6845
30	IC(IC501)	HA13155
31	FM/AM Tuner Unit	CWE1420
32	Holder	CNC6555
33	Chassis Unit	CXA9862
34	Button	CAC4836
35	Spring	CBH1834
36	Spring	CBH1835
37	Spring	CBH1933
38	Bracket	CNC6135
39	Bracket	CNC6791
40	Arm	CNV4692
41	Arm	CNV4693
42	Arm	CNV4728
43	Panel Unit	CXA9848
44	Door	CAT1835
45	Spring	CBH1838

Mark No.	Description	Part No.
46	Screw	IMS20P030FZK
47	Detach Grille Assy	CXA9988
48	Screw	BPZ20P120FZK
49	Button	CAC4859
50	Button(-,+)	CAC4991
51	Button(SOURCE)	CAC4861
52	Button(F,A)	CAC4862
53	Button(BAND)	CAC4863
54	Button(1-6)	CAC4992
55	Button	CAC4865
56	Button	CAC4866
57	Button(⏏)	CAC4867
58	Button(⏪)	CAC4868
59	Button(⏩)	CAC4869
60	Button(⌂)	CAC4993
61	Spring	CBH1836
62	Cushion	CNM5156
63	Cushion	CNM5271
64	Cover	CNS4181
65	Key Board Unit	CWM5183
66	LCD(LCD901)	CAW1391
67	Connector(CN901)	CKS3580
68	Holder	CNC6831
69	Lighting Conductor	CNV4753
70	Connector	CNV4754
71	Grille Unit	CXA9846
72	Case Assy	CXB1063
73	Cassette Mechanism Assy	EXK3456
74	Transistor(Q801)	2SD2037
75-80	•••••	
81	Spacer	CNM5319

● Parts List(KEH-2520R/X1M/GR)

Mark	No.	Description	Part No.
	1	Screw	BSZ26P050FMC
	2	Screw	BSZ30P100FMC
	3	Cord Assy	CDE5342
	4	Case	CNB2074
	5	Holder	CNC5394
	6	Fuse(10A)	CEK1136
	7	Screw	CBA1304
	8	Bush	CNV3930
	9	Handle	CNC5395
	10	Screw	BSZ30P060FMC
	11	Screw	BSZ30P100FMC
	12	Holder	CNC5704
	13	Insulator	CNM5025
	14	Tuner Amp Unit	CWM5179
	15	•••••	
	16	Screw	BSZ26P080FMC
	17	Cushion	CNM4870
	18	•••••	
	19	Plug(CN601)	CKM1226
	20	Connector(CN604)	CKS3362
	21	•••••	
	22	Connector(CN603)	CKS3581
	23	Antenna Jack(CN301)	CKX1056
	24	Panel	CNB2106
	25	Holder	CNC5399
	26	Heat Sink	CNC6217
	27	Holder	CNC6372
	28	•••••	
	29	Holder	CNC6845
	30	IC(IC501)	HA13155
	31	FM/AM Tuner Unit	CWE1420
	32	Holder	CNC6555
	33	Chassis Unit	CXA9855
	34	Button	CAC4836
	35	Spring	CBH1834
	36	Spring	CBH1835
	37	Spring	CBH1933
	38	Bracket	CNC6135
	39	Bracket	CNC6791
	40	Arm	CNV4692
	41	Arm	CNV4693
	42	Arm	CNV4728
	43	Panel Unit	CXA9848
	44	Door	CAT1835
	45	Spring	CBH1838

Mark	No.	Description	Part No.
	46	Screw	IMS20P030FZK
	47	Detach Grille Assy	CXA9994
	48	Screw	BPZ20P120FZK
	49	Button	CAC4859
	50	Button(-,+)	CAC4991
	51	Button(SOURCE)	CAC4861
	52	Button(F,A)	CAC4862
	53	Button(BAND)	CAC4863
	54	Button(1-6)	CAC4992
	55	Button	CAC4865
	56	Button	CAC4866
	57	Button(⏏)	CAC4867
	58	Button(⏪)	CAC4868
	59	Button(⏩)	CAC4869
	60	Button(⌂)	CAC4993
	61	Spring	CBH1836
	62	Cushion	CNM5156
	63	Cushion	CNM5271
	64	Cover	CNS4181
	65	Key Board Unit	CWM5197
	66	LCD(LCD901)	CAW1391
	67	Connector(CN901)	CKS3580
	68	Holder	CNC6831
	69	Lighting Conductor	CNV4753
	70	Connector	CNV4754
	71	Grille Unit	CXA9842
	72	Case Assy	CXB1063
	73	Cassette Mechanism Assy	EXK3456
	74	Transistor(Q801)	2SD2037
	75-80	•••••	
	81	Spacer	CNM5319

2.3 CASSETTE MECHANISM ASSY

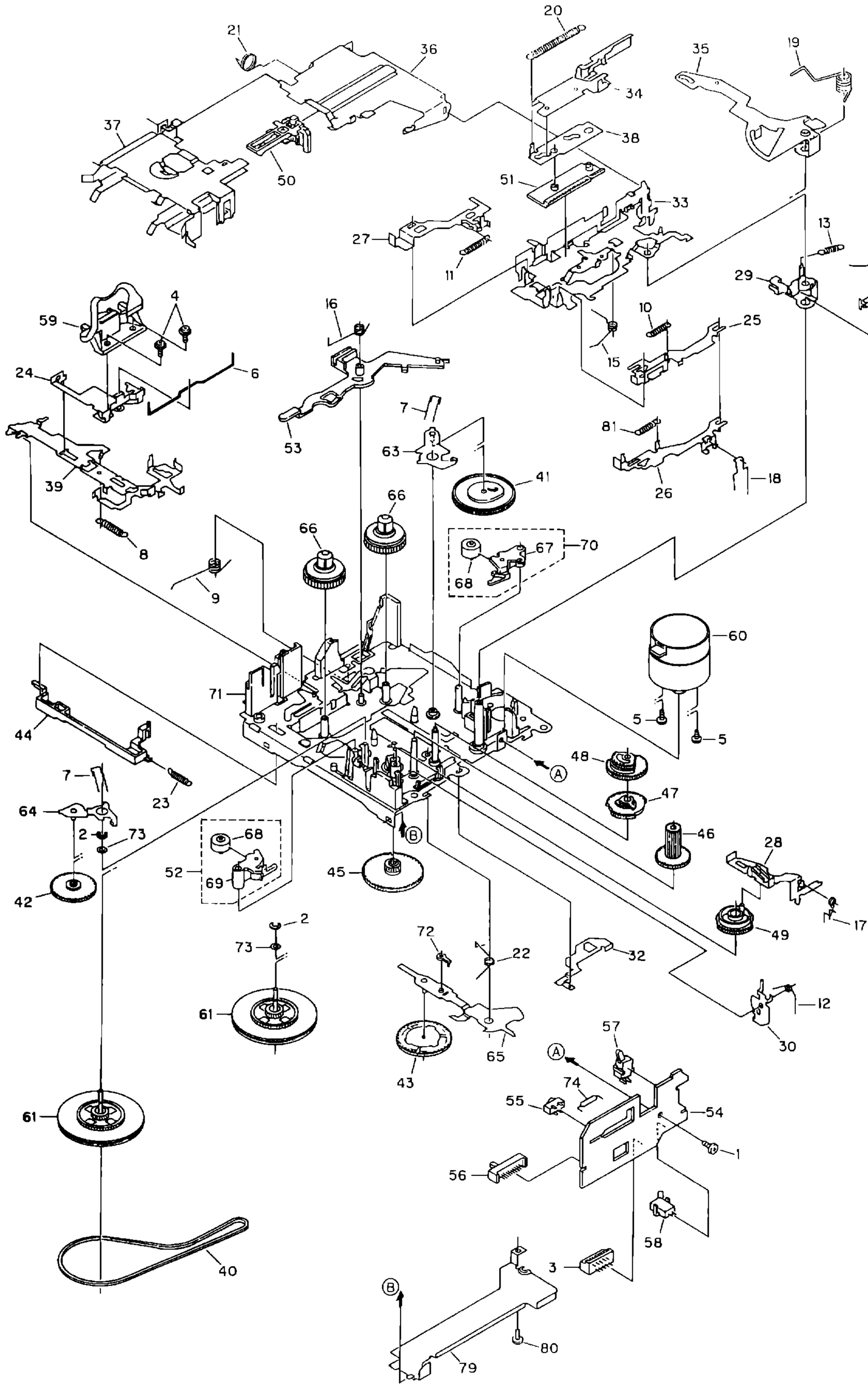


Fig. 4

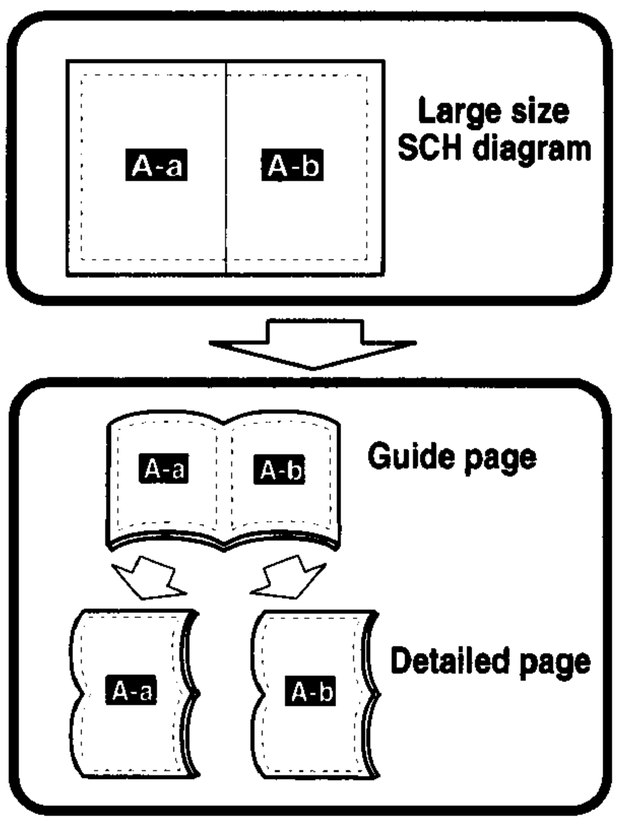
● Parts List

Mark	No.	Description	Part No.
	1	Screw	BSZ23P050FMC
	2	Washer	CBG1003
	3	Connector(CN1)	CKS2829
	4	Screw(M2x5)	EBA1028
	5	Screw(M2x2.5)	EBA1037
	6	Spring	EBH1554
	7	Spring	EBH1555
	8	Spring	EBH1556
	9	Spring	EBH1557
	10	Spring	EBH1591
	11	Spring	EBH1559
	12	Spring	EBH1560
	13	Spring	EBH1561
	14	Spring	EBH1562
	15	Spring	EBH1563
	16	Spring	EBH1590
	17	Spring	EBH1565
	18	Spring	EBH1566
	19	Spring	EBH1567
	20	Spring	EBH1568
	21	Spring	EBH1569
	22	Spring	EBH1571
	23	Spring	EBH1579
	24	Head Base	ENC1457
	25	Lever	ENC1429
	26	Lever	ENC1430
	27	Lever	ENC1431
	28	Lever	ENC1432
	29	Arm	ENC1433
	30	Arm	ENC1434
	31	Arm	ENC1435
	32	Arm	ENC1451
	33	Bracket	ENC1437
	34	Lever	ENC1438
	35	Arm	ENC1439
	36	Frame	ENC1440
	37	Holder	ENC1441
	38	Lever	ENC1446
	39	Lever	ENC1454
	40	Belt	ENT1027
	41	Gear	ENV1504
	42	Gear	ENV1470
	43	Gear	ENV1471
	44	Lever	ENV1472
	45	Gear	ENV1474
	46	Gear	ENV1475
	47	Gear	ENV1493
	48	Gear	ENV1477
	49	Gear	ENV1499
	50	Lever	ENV1480
	51	Lever	ENV1487
	52	Pinch Holder Unit	EXA1483
	53	Arm	ENV1489
*	54	P.C.Board	ENP1148
	55	Switch(Eject)(S4)	ESG1002
	56	Switch(FWD)(REV)(S3)	ESH1006
	57	Switch(Load)(S1)	ESN1016
	58	Switch(Mute)(S2)	ESN1017
	59	Head Assy(HD1)	EXA1466
	60	Motor Unit(M1)	EXA1467
	61	Flywheel Unit	EXA1468
	62	•••••	
	63	Arm Unit	EXA1447
	64	Arm Unit	EXA1448
	65	Arm Unit	EXA1449
	66	Reel Unit	EXA1450
	67	Pinch Holder	ENV1466
	68	Pinch Roller	ENV1501
	69	Pinch Holder	ENV1467
	70	Pinch Holder Unit	EXA1482
	71	Chassis Unit	EXA1465
	72	Service Arm	EXX1048
	73	Washer	HBF-179
	74	Resistor(R1)	RD1/4HM472J
	75-78	•••••	
	79	Cover	ENC1452
	80	Screw	BSZ23P050FMC
	81	Spring	EBH1591

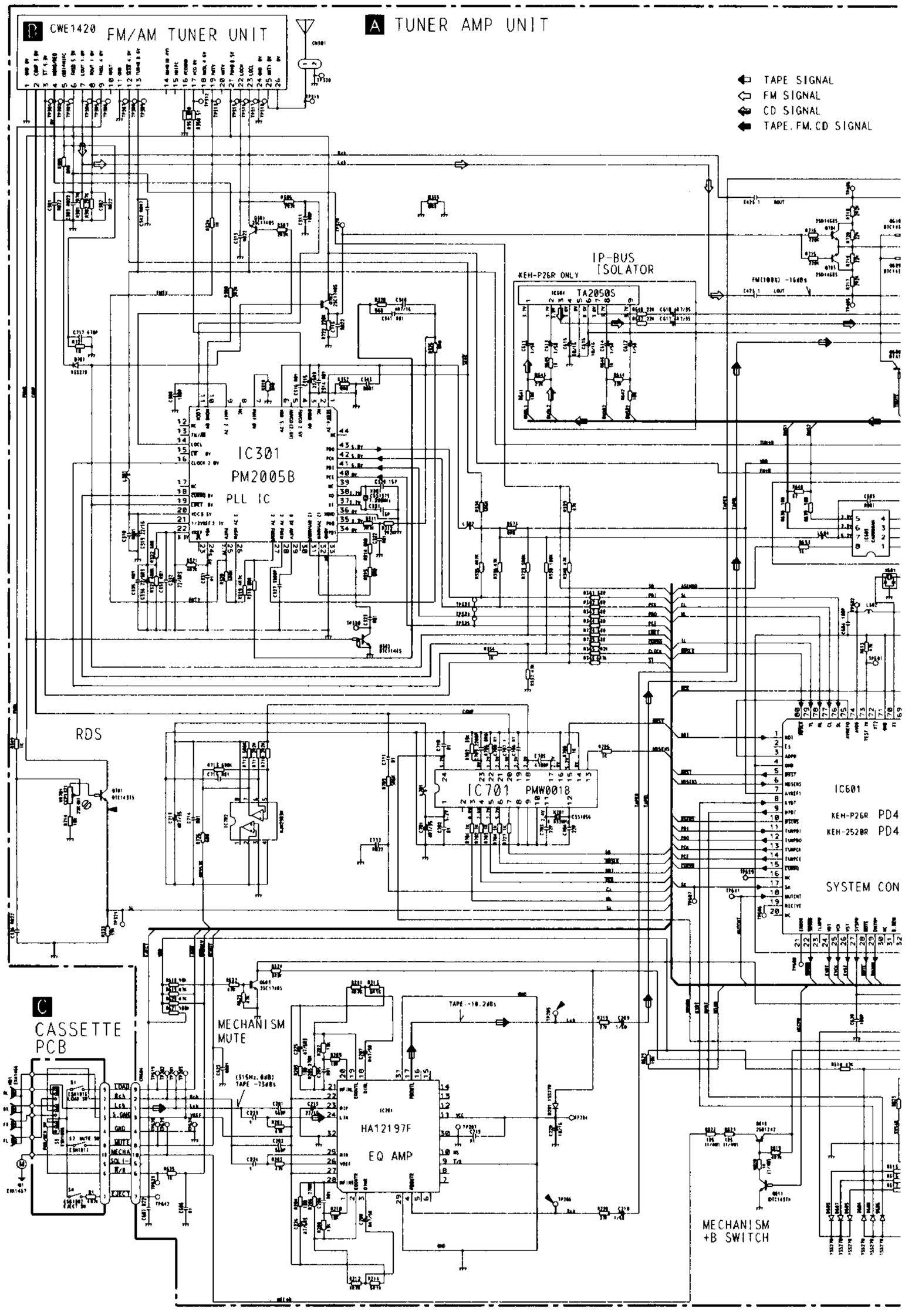
3. SCHEMATIC DIAGRAM

3.1 OVERALL CONNECTION DIAGRAM(GUIDE PAGE)

Note: When ordering service parts, be sure to refer to "EXPLODED VIEWS AND PARTS LIST" or "ELECTRICAL PARTS LIST".



A-a



A-b

NOTE

⏀ Symbol indicates a resistor.
No differentiation is made between chip resistors and discrete resistors.

⊣⊢ Symbol indicates a capacitor.
No differentiation is made between chip capacitors and discrete capacitors.

Decimal points for resistor and capacitor fixed values are expressed as
2.2→2R2
0.022→R022

The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

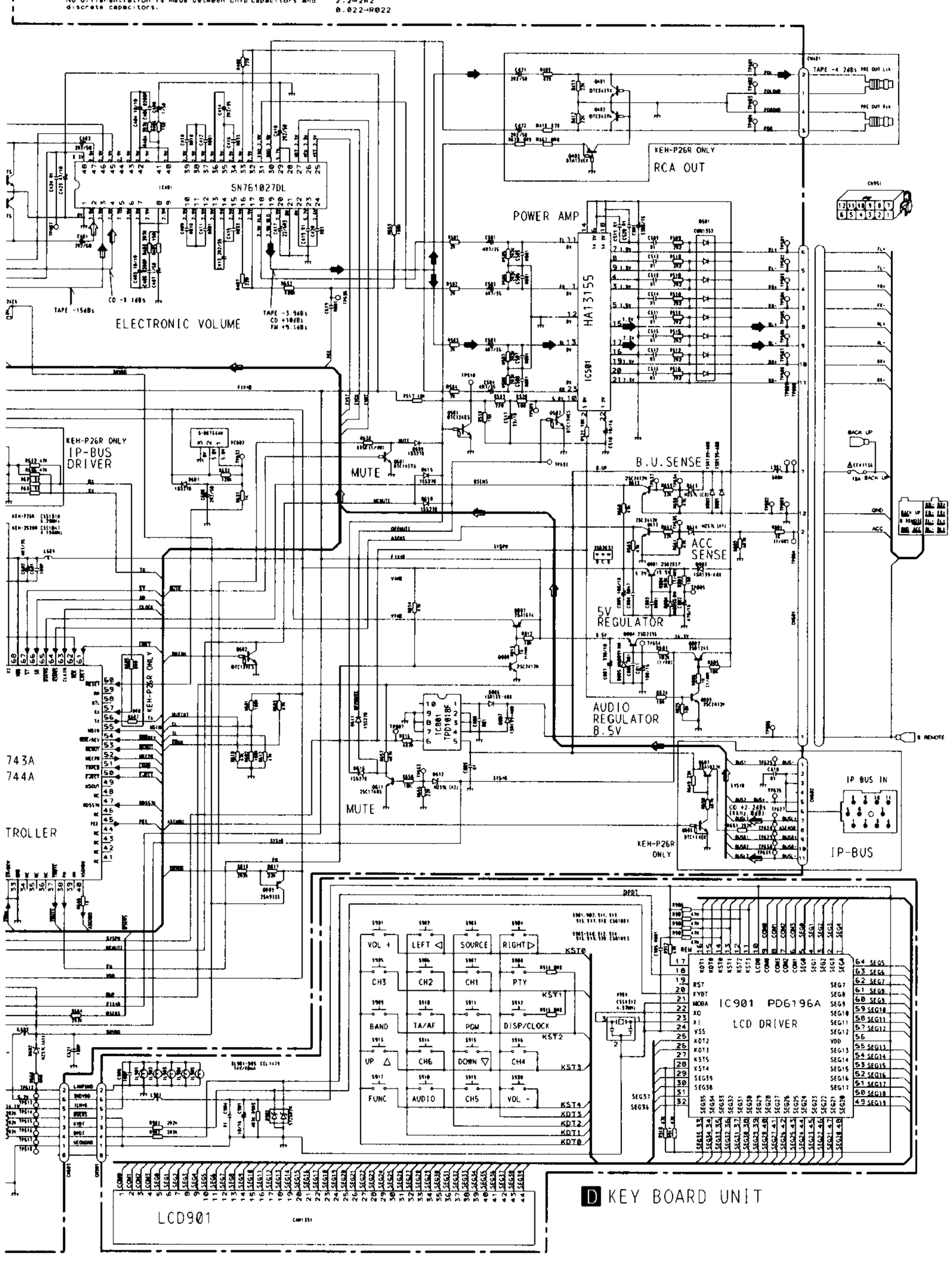
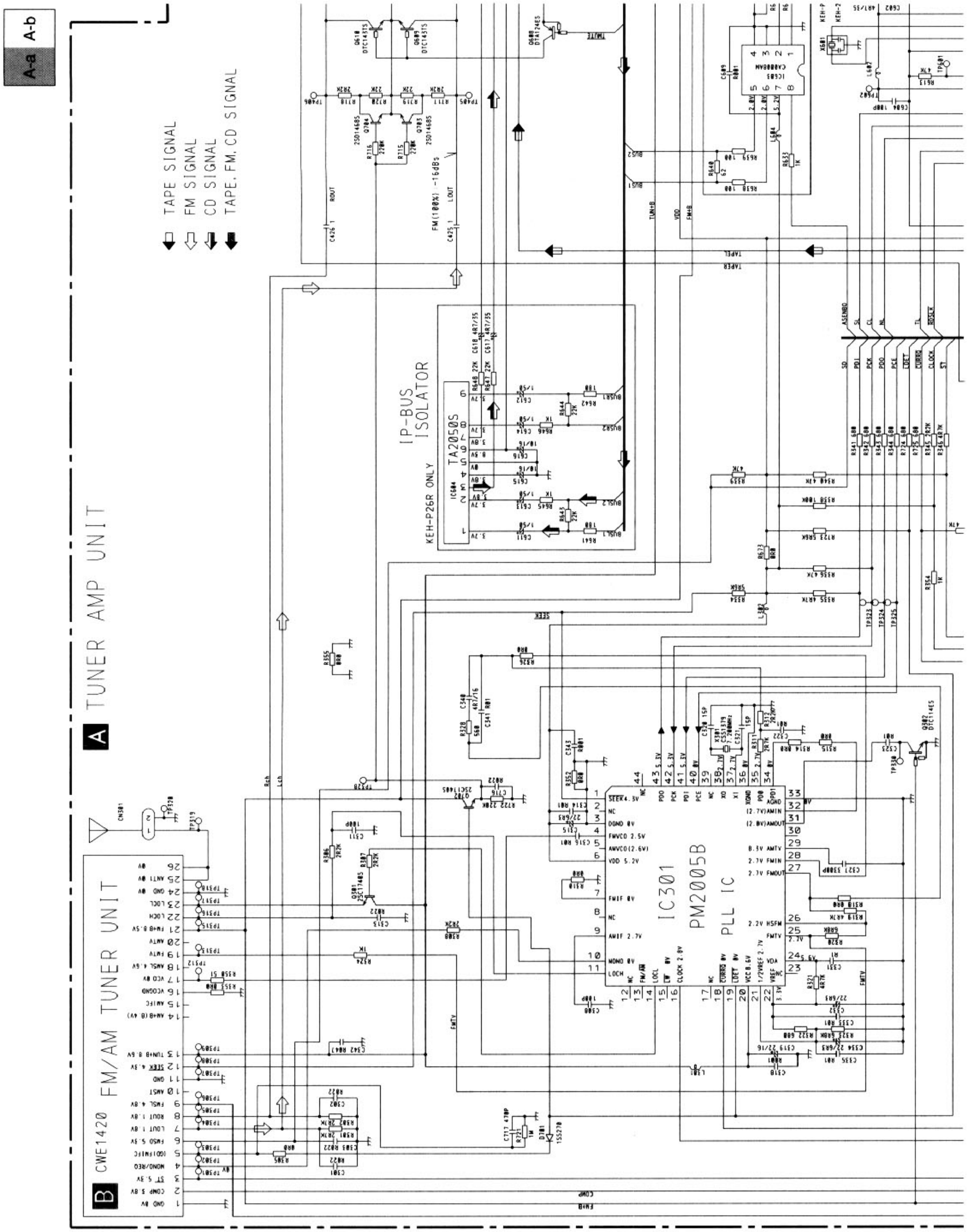


Fig. 5


A-b
A-a
TAPE SIGNAL
FM SIGNAL
CD SIGNAL
TAPE, FM, CD SIGNAL
A TUNER AMP UNIT
B CWE1420 FM/AM TUNER UNIT
IP-BUS ISOLATOR
KEH-P26R ONLY
TA2050S
PM2005B
PLL IC
IC301
FM(100%) -16dBs
ROUT
LOUT
Rch
Lch
SEEK
FMTV
COMP
FMB
TAPEL
TAPER
VDD
FM+B
TUN+B
ASENSE
SD
PDI
PCK
PDO
PCE
LDET
CURRD
CLOCK
ST
ROSLK
SEEK4.5V
NC
DGND 0V
FMVCO 2.5V
AMVCO(2.6V)
VDD 5.2V
FMIF 0V
AMIF 2.7V
MONO 0V
LOCH
FM/AM
LOCL
CLOCK 2.8V
CURRD 0V
LDET 0V
VCC 8.5V
1/2VREF 2.7V
VDA
VREF
XGND
AGND
(2.7V)AMIN
(2.8V)AMOUT
8.5V AMTV
2.7V FMIN
2.7V FMOUT
2.2V HSFM
FMTV
CN301
GND 0V
COMP 3.8V
ST 5.3V
MONO/REC
IGDIFMIFC
FMSO 5.5V
LOUT 1.8V
ROUT 1.8V
FMSL 4.8V
AMST
GND
TUN+B 8.6V
SEEK 4.3V
FM+B 8.5V
LOCH
LOCL
GND 0V
ANT1 0V
AMTV
FMTV
AMSL 4.6V
VCO 0V
VCOGND
AMIFC
AM+B (8.4V)

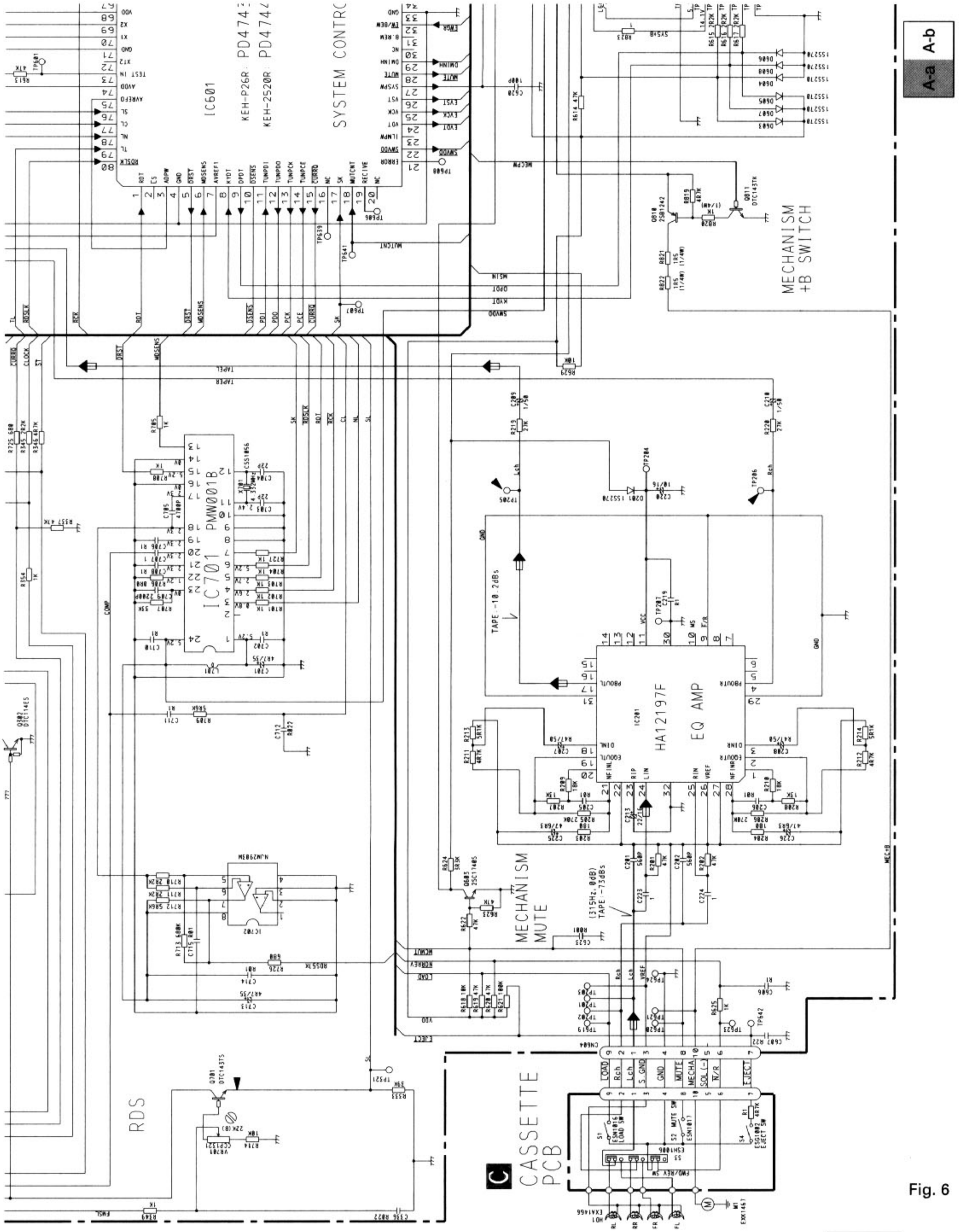
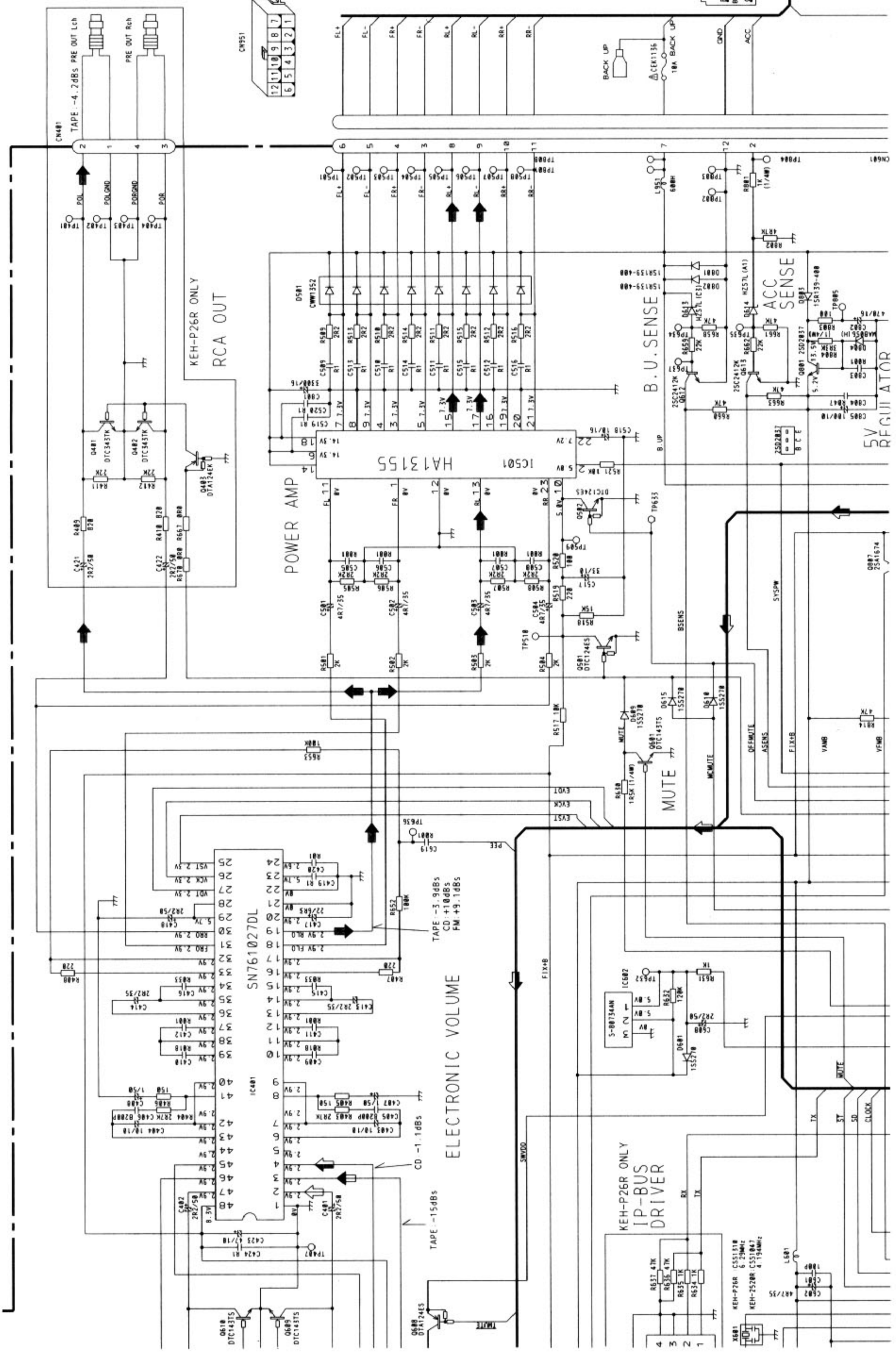

A-b
A-a
SYSTEM CONTRC
KEH-P26R: PD474
KEH-2520R: PD474
IC601
MECHANISM
+B SWITCH
IC701 PMW001B
IC201 HA12197F EQ AMP
MECHANISM
MUTE
CASSETTE
PCB
RDS
TAPE:-10.2dBs
(315Hz,0dB)
TAPE:-73dBs
MECHA

Fig. 6

KEH-P26R,252OR

A-a A-b



NOTE:

- ⊐ Symbol indicates a resistor. No differentiation is made between chip resistors and discrete resistors.
- ⊣⊢ Symbol indicates a capacitor. No differentiation is made between chip capacitors and discrete capacitors.

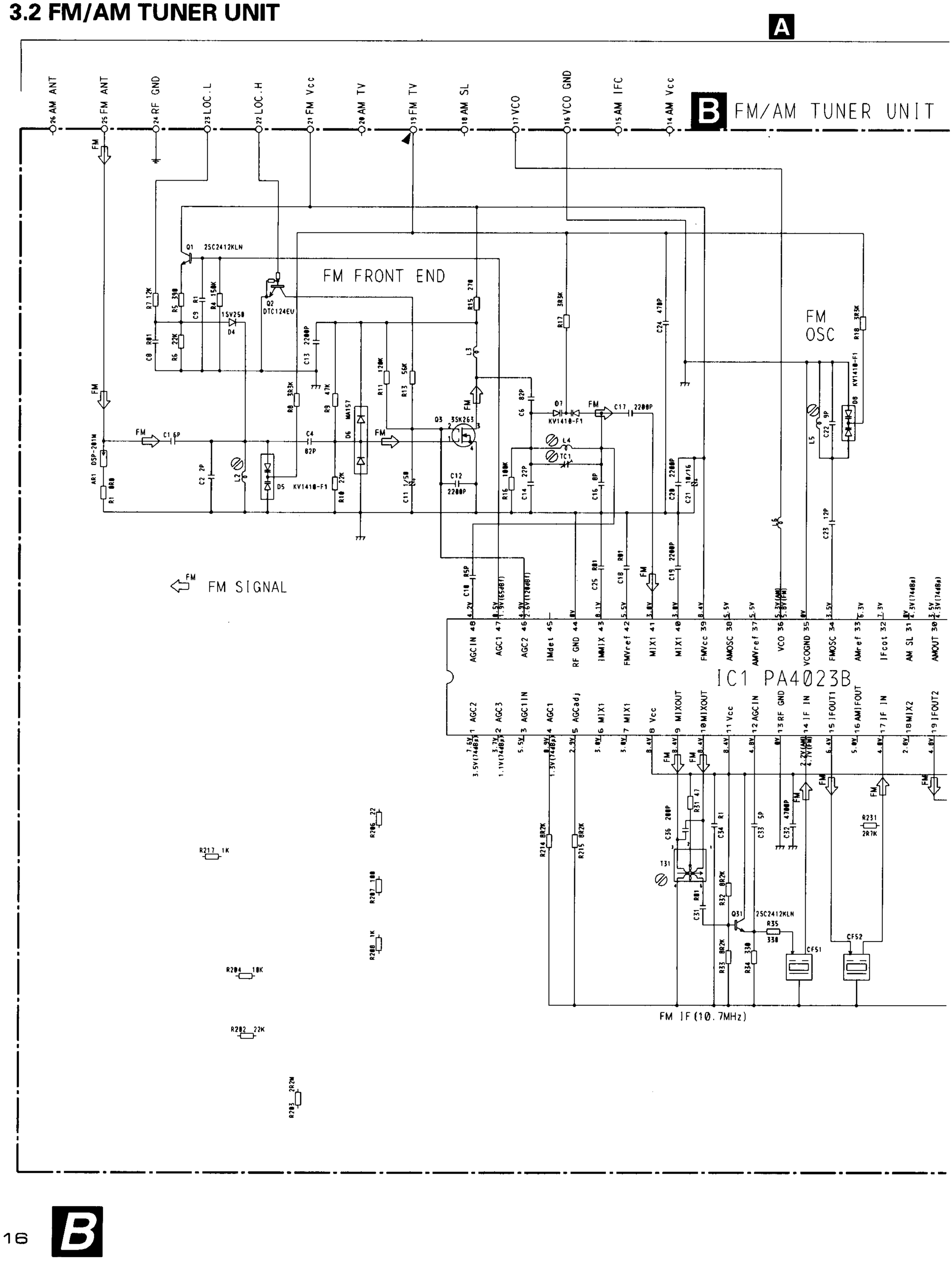
The ⚠ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.

Decimal points for resistor and capacitor fixed values are expressed as
2.2→2R2
0.022→R022

A-a A-b

Fig. 7

3.2 FM/AM TUNER UNIT



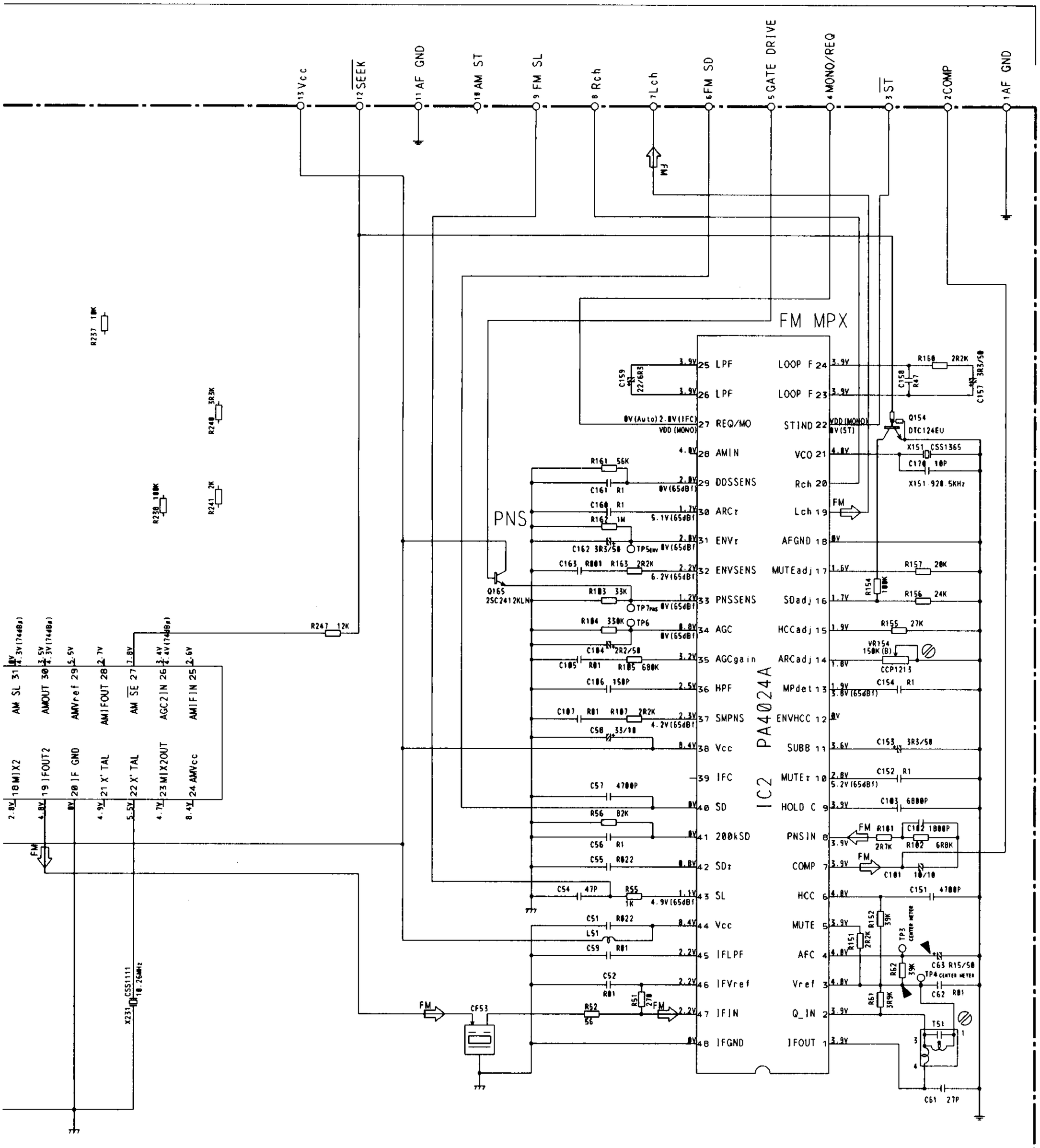

FM MPX
IC2 PA4024A
13 Vcc
12 SEEK
11 AF GND
10 AM ST
9 FM SL
8 Rch
7 Lch
6 FM SD
5 GATE DRIVE
4 MONO/REQ
3 ST
2 COMP
1 AF GND
25 LPF
26 LPF
27 REQ/MO
28 AMIN
29 DDSSENS
30 ARCr
31 ENVr
32 ENVSENS
33 PNSSENS
34 AGC
35 AGCgain
36 HPF
37 SMPNS
38 Vcc
39 IFC
40 SD
41 200kSD
42 SDr
43 SL
44 Vcc
45 IFLPF
46 IFVref
47 IFIN
48 IFGND
LOOP F 24
LOOP F 23
STIND 22
VCO 21
Rch 20
Lch 19
AFGND 18
MUTEadj 17
SDadj 16
HCCadj 15
ARCadj 14
MPdet 13
ENVHCC 12
SUBB 11
MUTEr 10
HOLD C 9
PNSIN 8
COMP 7
HCC 6
MUTE 5
AFC 4
Vref 3
Q_IN 2
IFOUT 1
PNS
FM
Q154 DTC124EU
X151 CSS1365
X151 920.5KHz
Q165 2SC2412KLN
CF53
TS1
TP3 CENTER METER
TP4 CENTER METER
VR154 150K (B)
CCP1213
AM SL 31
AMOUT 30
AMVref 29
AMIFOUT 28
AM SE 27
AGC2IN 26
AMIFIN 25
18 MIX2
19 IFOUT2
20 IF GND
21 X'TAL
22 X'TAL
23 MIX2OUT
24 AMVcc
X231 CSS1111 10.26MHz

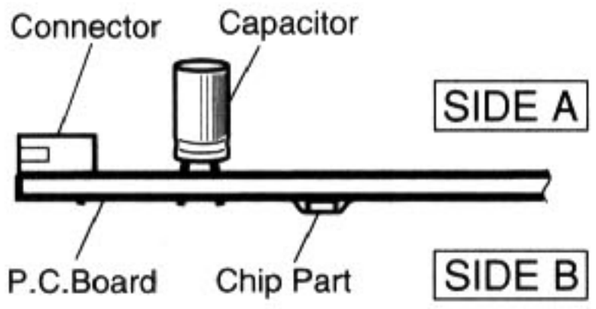
Fig. 8

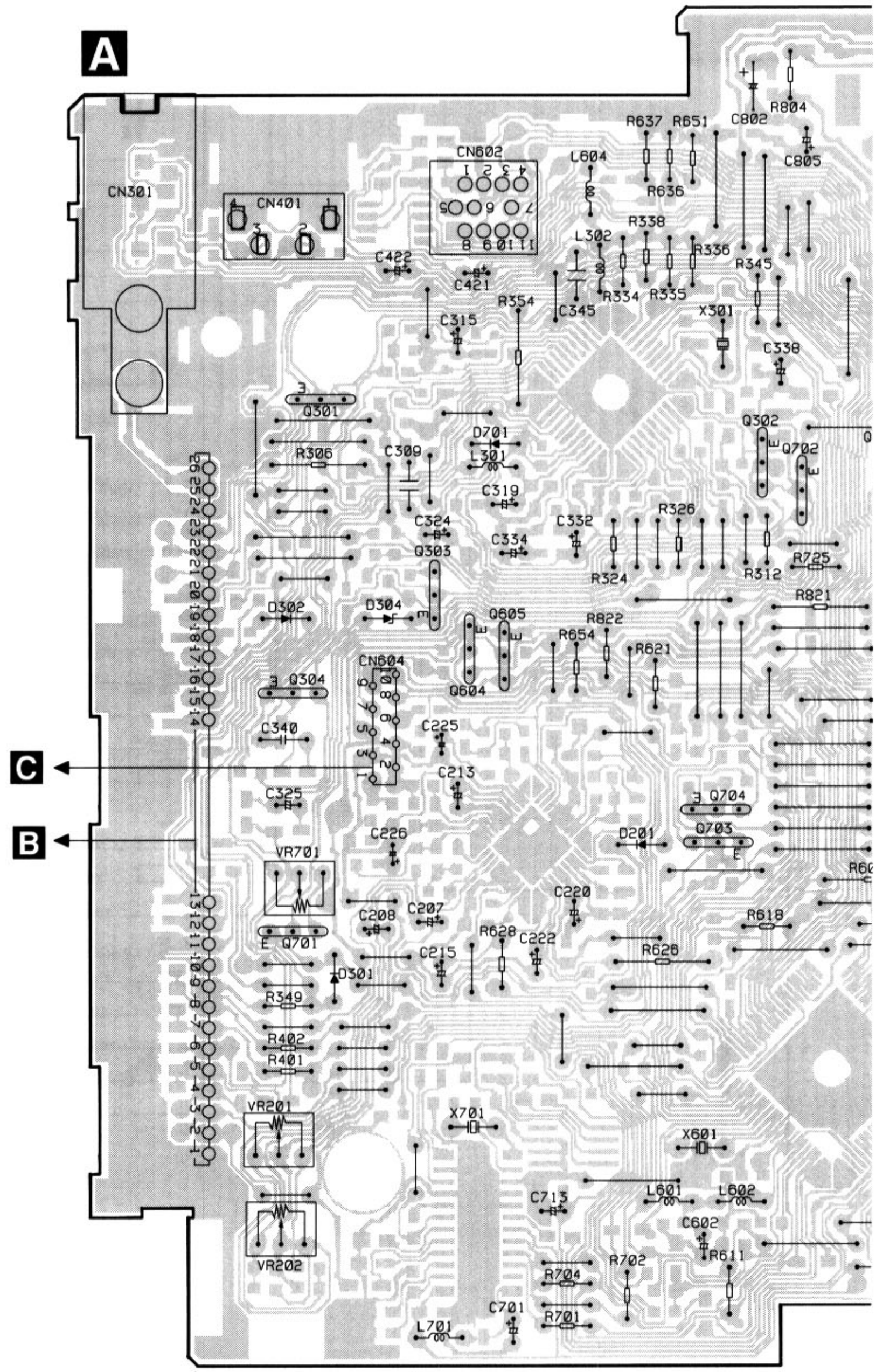
4. PCB CONNECTION DIAGRAM

4.1 TUNER AMP UNIT

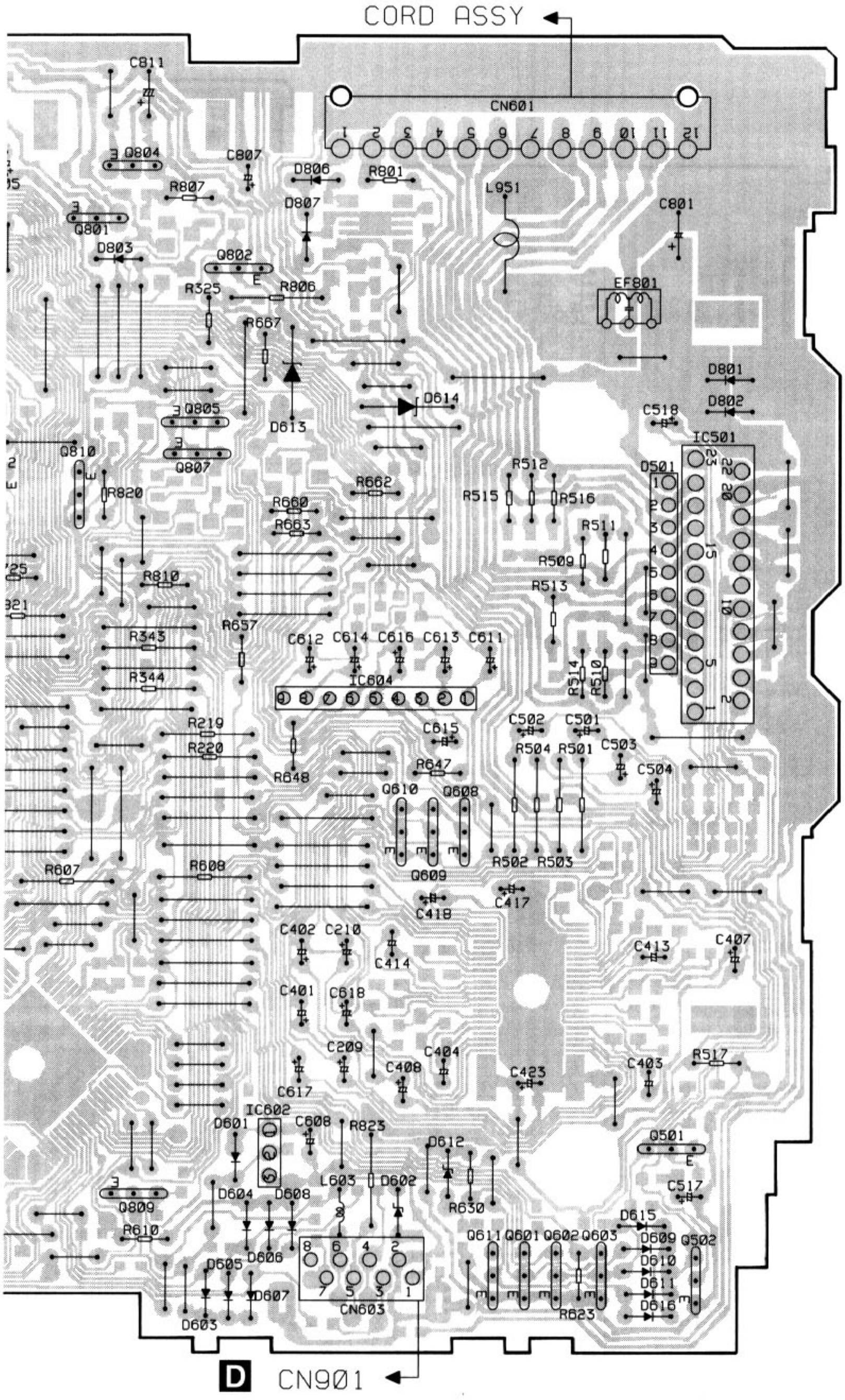
NOTE FOR PCB DIAGRAMS

1. The parts mounted on this PCB include all necessary parts for several destination.
   For further information for respective destinations, be sure to check with the schematic diagram.
2. Viewpoint of PCB diagrams





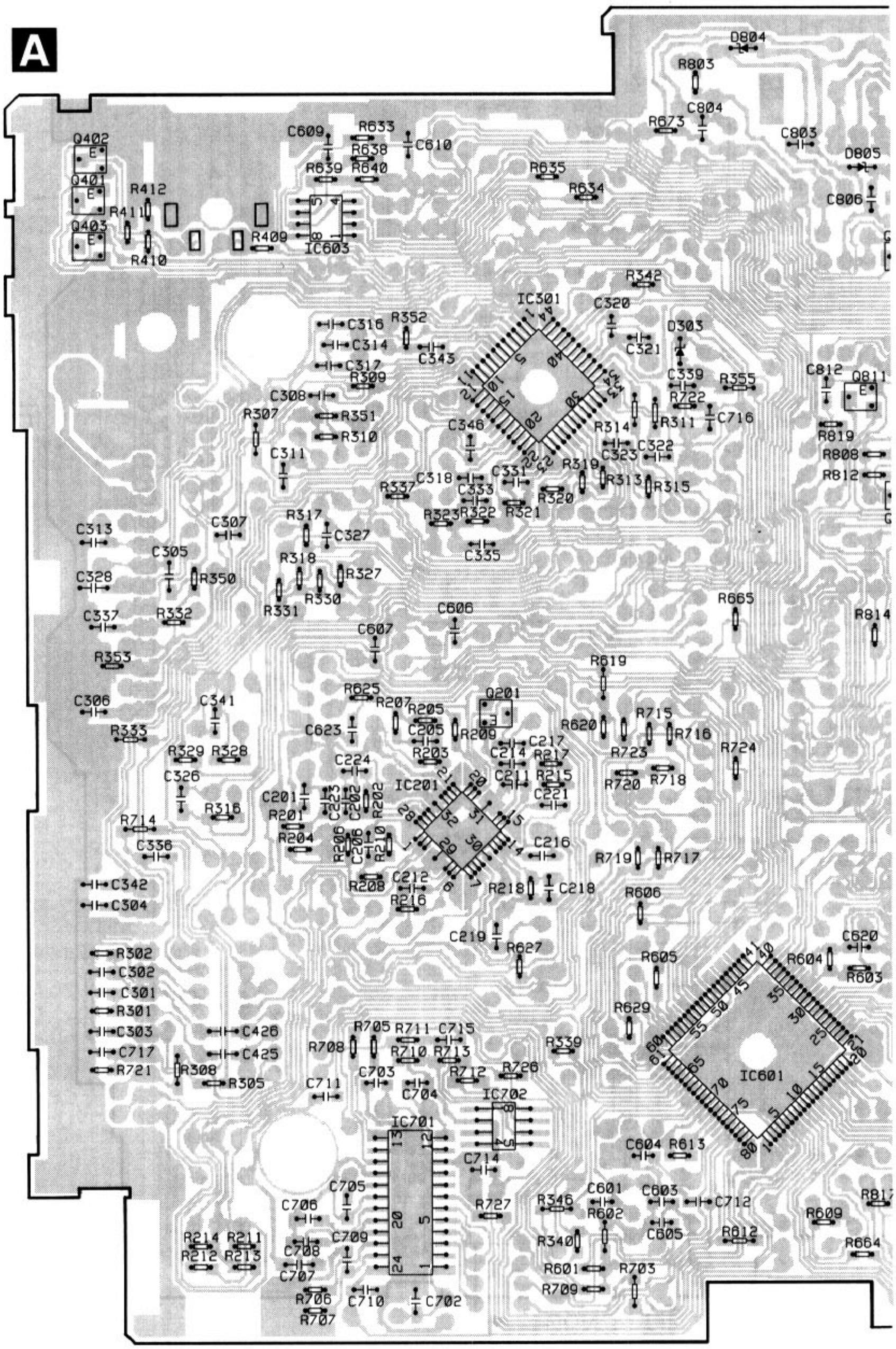
SIDE A

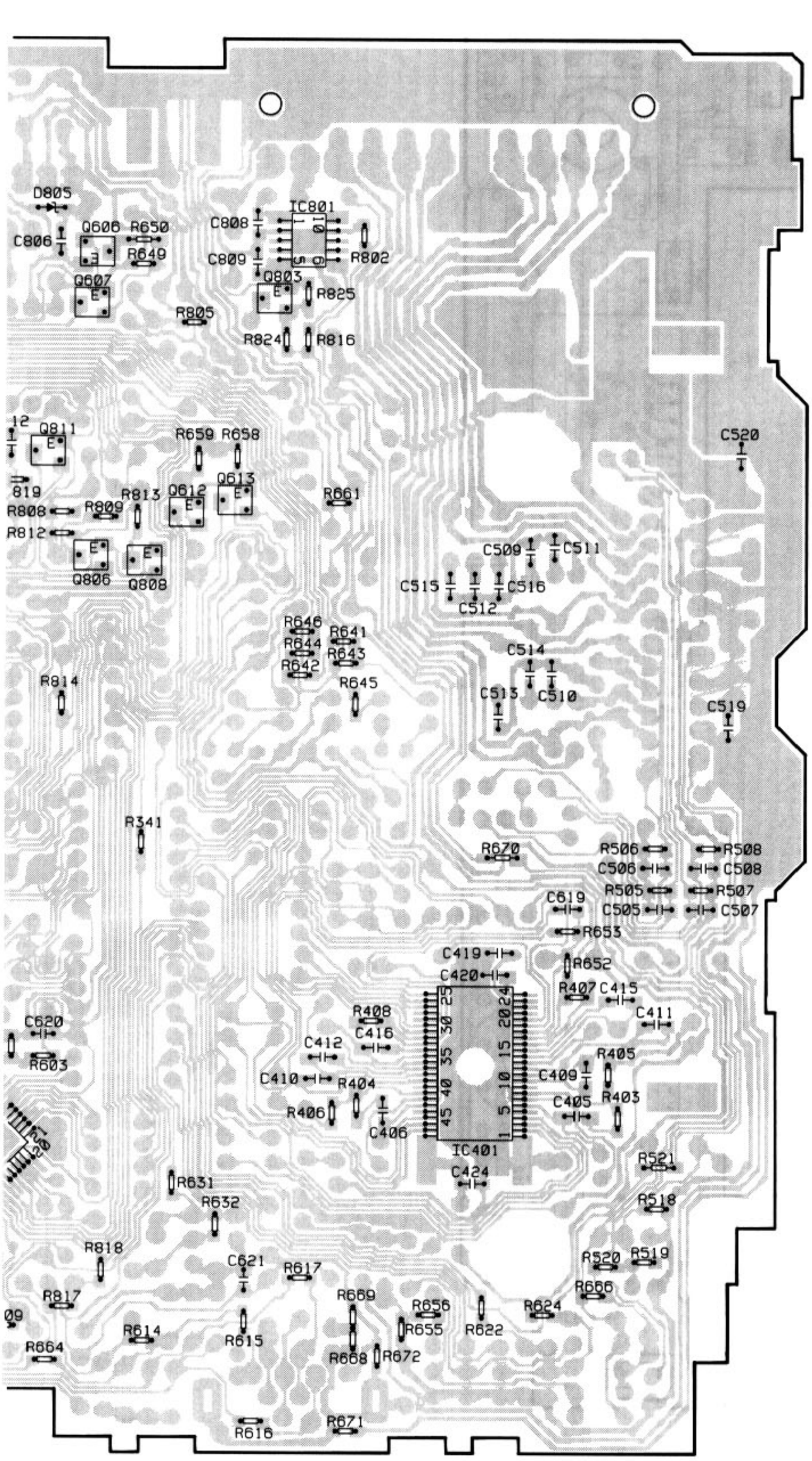


	ADJ	IC. Q
		Q804
		Q801
		Q802
		Q301 Q805
		Q302 Q810
		Q702 Q807
		Q303
		Q605
		Q304 IC604
		Q604
		Q610 Q608
		Q704
		Q703
VR701		
		Q609
		Q701
VR201		IC602
		Q501
		Q809
VR202		Q611 Q603
		Q602 Q601
		Q502

Fig. 9

A


D804
R803
C804
R673
C803
D805
C806
C609
R633
R638
C610
R639
R640
R635
R634
Q402
Q401
Q403
R412
R411
R410
R409
IC603
R342
IC301
C320
D303
C316
C314
C317
R352
C343
C321
C339
R355
C812
Q811
R722
R311
C716
R309
C308
R307
R351
R310
C346
R314
C322
C323
R819
R808
R812
C311
C318
C331
R319
R313
R315
R337
C333
R320
R323
R322
R321
C335
C313
C307
R317
C327
C305
R318
R327
C328
R350
R330
R331
R332
C337
C606
C607
R665
R814
R353
R619
R625
R207
R205
Q201
C623
C205
R209
C217
C214
R217
R620
R715
R716
R723
R724
R720
R718
C224
C326
R203
C211
R215
C221
IC201
C201
R316
R201
R204
R206
C206
R210
R202
C216
R719
R717
R714
C336
C212
R208
R216
R218
C218
R606
C342
C304
C219
R627
C620
R605
R604
R603
R629
R339
R302
C302
C301
R301
C303
C717
R721
C426
C425
R308
R305
R705
R711
C715
R708
R710
R713
R712
R726
C703
C711
C704
IC702
IC701
IC601
C714
C604
R613
C705
C706
C709
C708
C707
R706
R707
C710
C702
R727
R346
C601
R602
C603
C712
C605
R609
R817
R664
R340
R601
R709
R703



SIDE B

IC. Q

Q402
IC801
Q606
Q401
Q403
Q607 Q803
IC603

IC301 Q811

Q613 IC501
Q612

Q806
Q808

Q201

IC201

IC601
IC401

IC702

IC701

Fig. 10

4.2 KEY BOARD UNIT

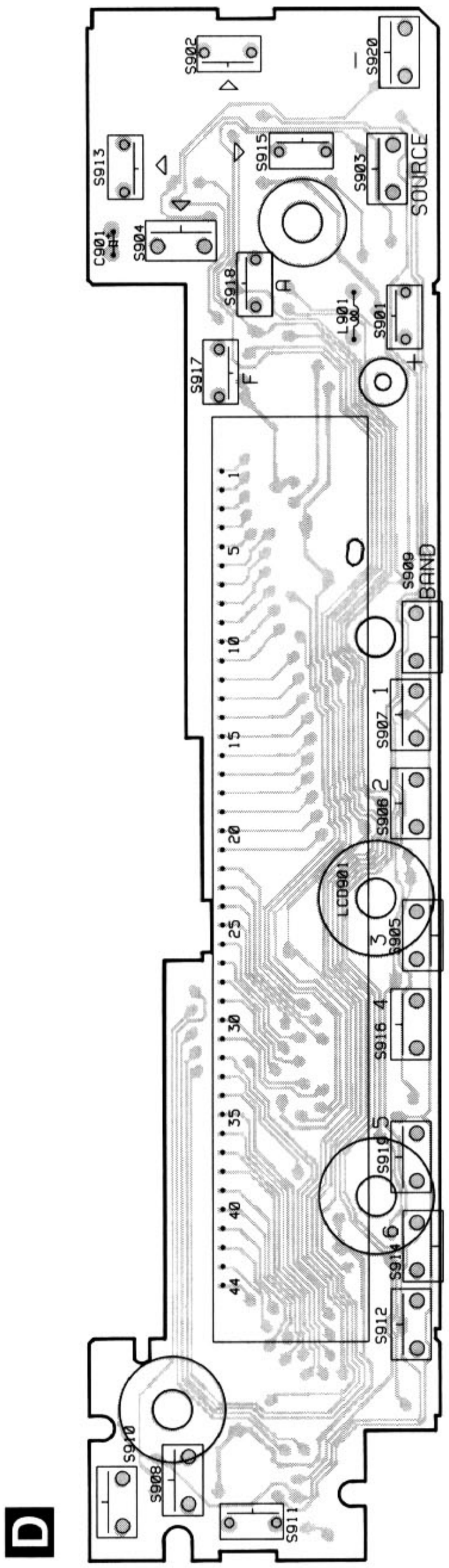


Fig. 11

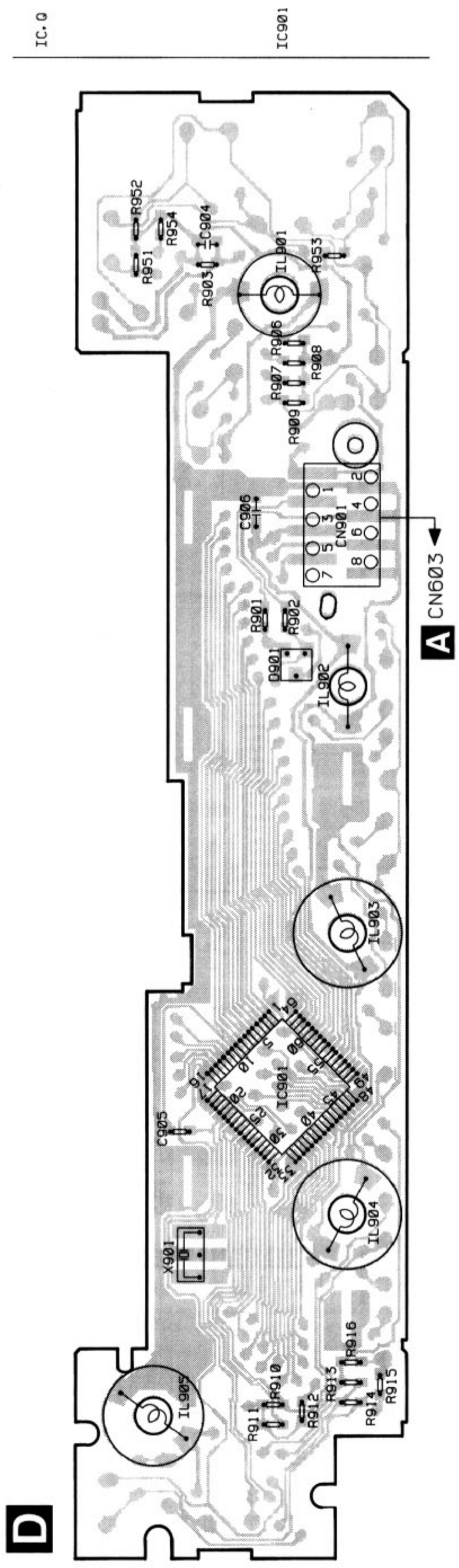

IC.0
IC901
SIDE B
R952
R954
IC904
R951
R903
IL901
R953
R906
R907
R908
R909
C906
CN901
R901
R902
D901
IL902
A
CN603
IL903
IC901
C905
X901
IL904
IL905
R911
R910
R912
R913
R916
R914
R915
D

Fig. 12

4.3 FM/AM TUNER UNIT

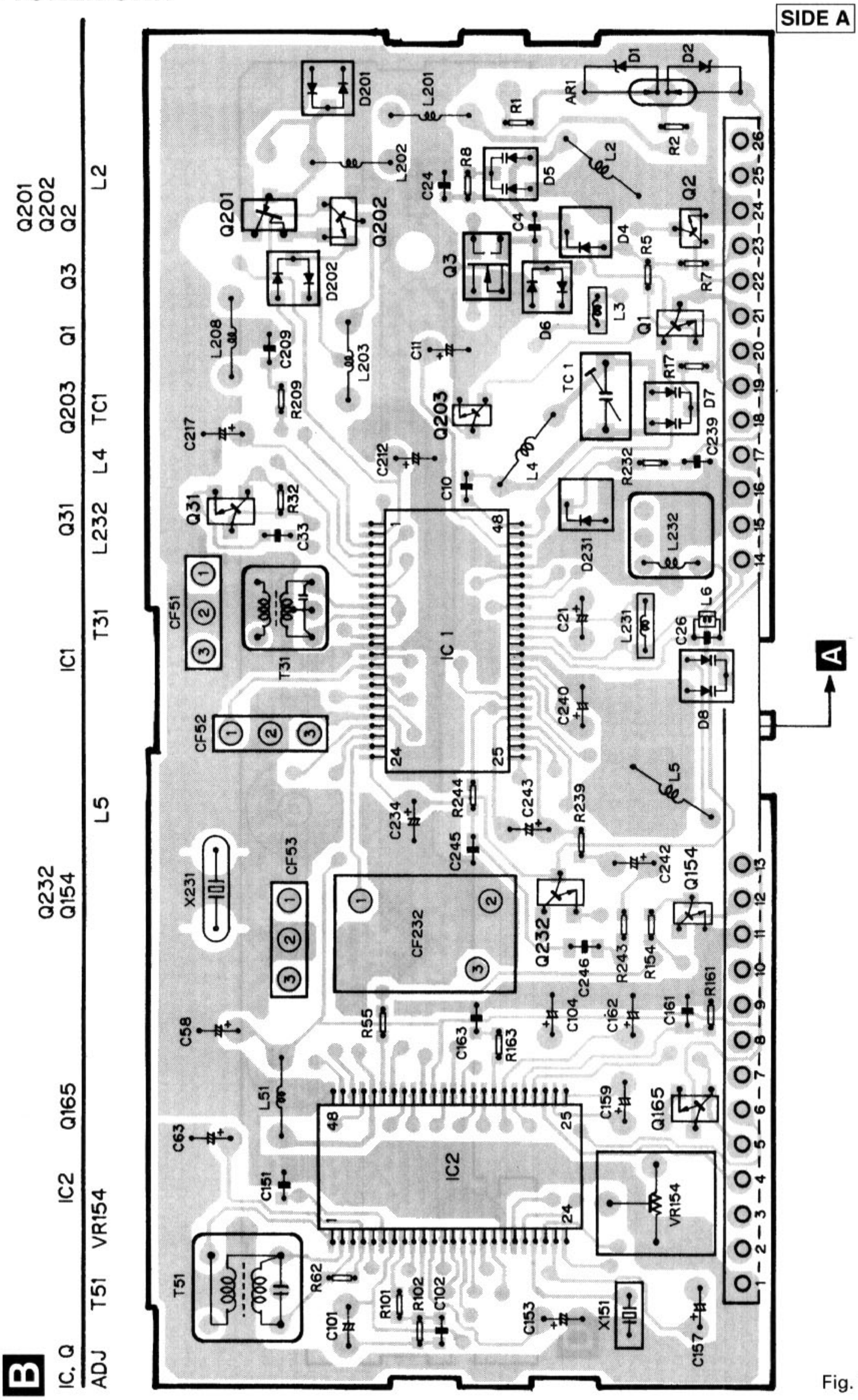


Fig. 13

SIDE B

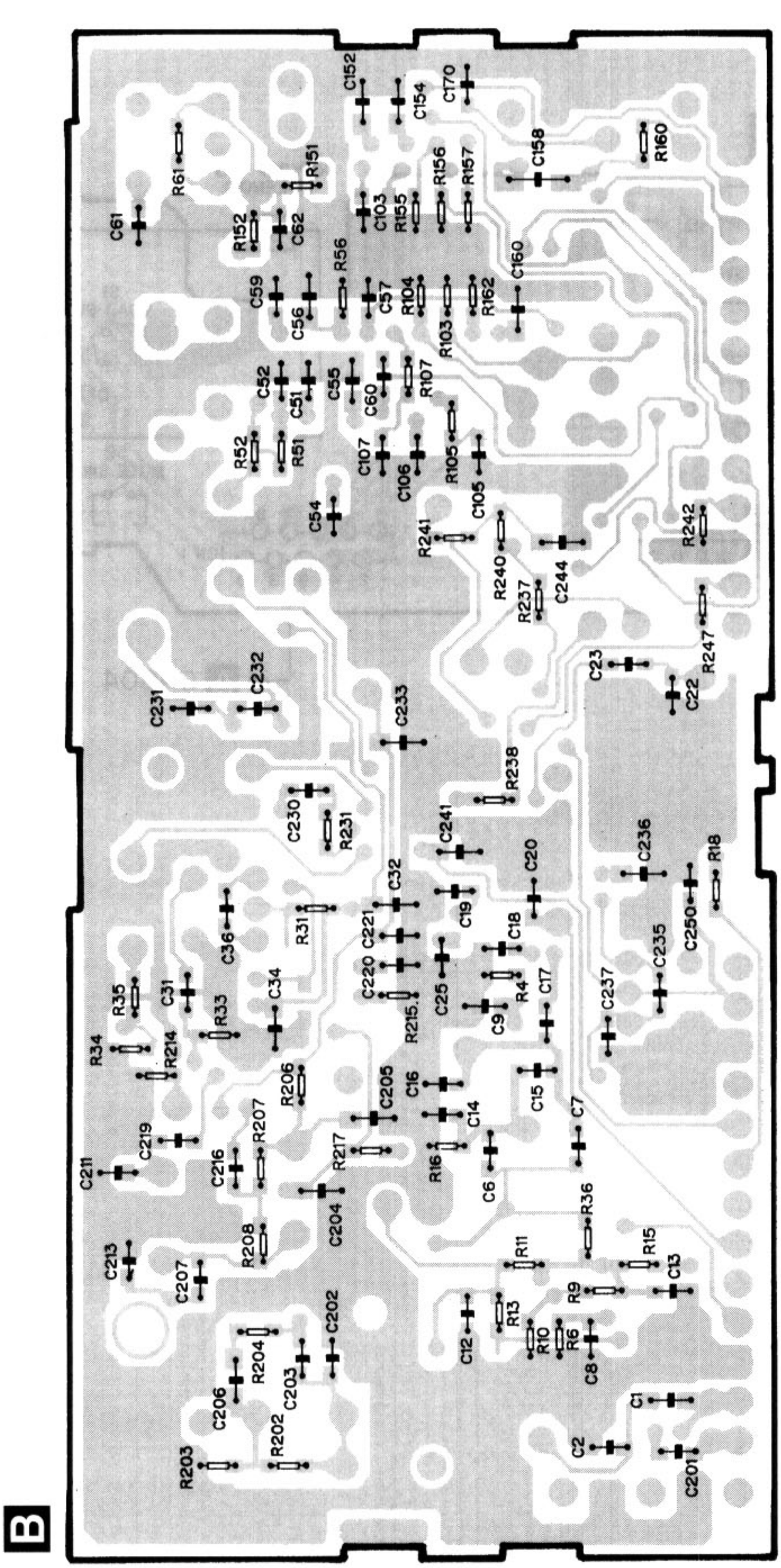

C61
R61
R152
C62
R151
C59
C56
R56
C57
C103
R155
R104
R156
R157
C152
C154
C170
C158
R160
C160
R162
R103
C52
C51
C55
C60
R107
R52
R51
C107
C106
R105
C105
C54
R241
R240
R237
C244
R242
C231
C232
C233
C23
C22
R247
C230
R231
C32
C241
R238
C221
C220
R215
C25
C19
C18
C20
R31
R4
C17
C9
C236
C237
C235
C250
R18
R34
R35
C31
R214
R33
C36
C34
C219
C216
R207
R206
C205
C16
C14
R217
R16
C6
C15
C7
R36
C211
C213
C207
R208
C204
C206
R204
C203
C202
R203
R202
C12
R13
R11
R10
R6
R9
R15
C13
C8
C1
C2
C201

Fig. 14

4.4 CASSETTE PCB

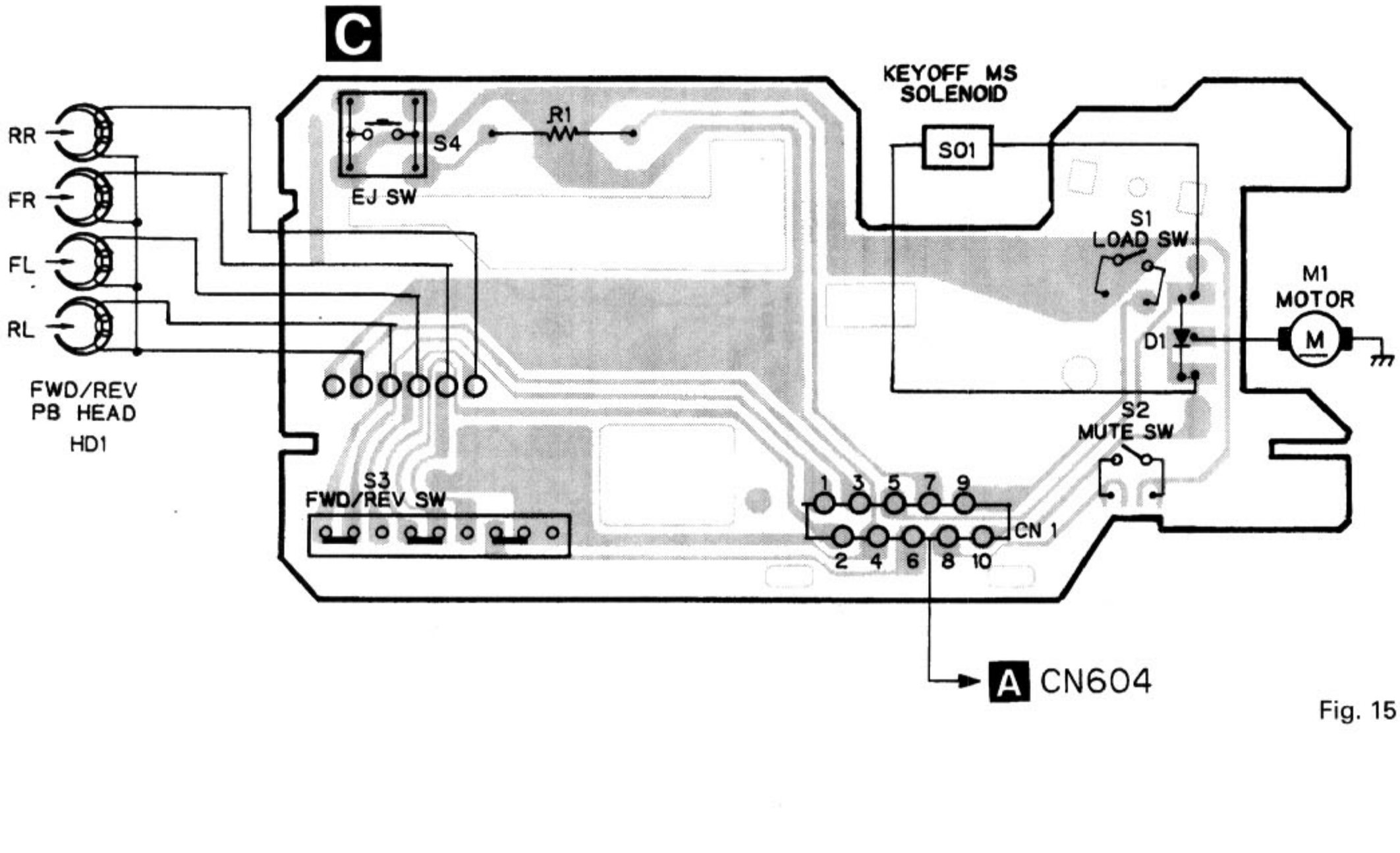


Fig. 15

5. ELECTRICAL PARTS LIST

NOTE:

- Parts whose parts numbers are omitted are subject to being not supplied.
- The part numbers shown below indicate chip components.

  Chip Resistor

  RS1/○S○○○J,RS1/○○S○○○J

  Chip Capacitor (except for CQS.....)

  CKS....., CCS....., CSZS.....

B Unit Number : CWE1420
Unit Name : FM/AM Tuner Unit

MISCELLANEOUS

=====Circuit Symbol & No.===		Part Name	Part No.
IC	1	IC	PA4023B
IC	2	IC	PA4024A
Q	1	Transistor	2SC2412KLN
Q	2	Transistor	DTC124EU
Q	3	FET	3SK263
Q	31	Transistor	2SC2412KLN
Q	154	Transistor	DTC124EU
Q	165	Transistor	2SC2412KLN
D	4	Diode	1SV250
D	5	Diode	KV1410-F1
D	6	Diode	MA157
D	7	Diode	KV1410-F1
D	8	Diode	KV1410-F1
L	2	Coil	CTC1108
L	3	Inductor	LCTB2R2K2125
L	4	Coil	CTC1108
L	5	Coil	CTC1107
L	6	Inductor	LCTBR15K1608
L	51	Ferri-Inductor	LAU150K
T	31	Coil	CTE1116
T	51	Coil	CTC1136
TC	1	Trimmer	CCL1046
CF	51	Ceramic Filter	CTF1292
CF	52	Ceramic Filter	CTF1292
CF	53	Ceramic Filter	CTF1292
X	151	Resonator 920.5kHz	CSS1365
X	231	Crystal Resonator 10.26MHz	CSS1111
VR	154	Semi-fixed 150kΩ(B)	CCP1213
AR	1	Capacitor with Discharge Gap	DSP-201M

RESISTORS

=====Circuit Symbol & No.===		Part No.
R	1	RS1/16S0R0J
R	4	RS1/16S154J
R	5	RS1/16S391J
R	6	RS1/16S223J
R	7	RS1/16S123J
R	8	RS1/16S332J
R	9	RS1/16S473J
R	10	RS1/16S223J
R	11	RS1/16S124J
R	13	RS1/16S563J
R	15	RS1/16S271J
R	16	RS1/16S104J
R	17	RS1/16S332J
R	18	RS1/16S332J
R	31	RS1/16S470J
R	32	RS1/16S822J
R	33	RS1/16S822J
R	34	RS1/16S331J
R	35	RS1/16S331J
R	51	RS1/16S271J
R	52	RS1/16S560J
R	55	RS1/16S102J
R	56	RS1/16S823J
R	61	RS1/16S392J
R	62	RS1/16S393J
R	101	RS1/16S272J
R	102	RS1/16S682J
R	103	RS1/16S333J
R	104	RS1/16S334J
R	105	RS1/16S683J
R	107	RS1/16S222J
R	151	RS1/16S222J
R	152	RS1/16S393J
R	154	RS1/16S104J
R	155	RS1/16S273J
R	156	RS1/16S243J
R	157	RS1/16S203J
R	160	RS1/16S222J
R	161	RS1/16S563J
R	162	RS1/16S105J
R	163	RS1/16S222J
R	202	RS1/16S223J
R	203	RS1/16S225J
R	204	RS1/16S103J
R	206	RS1/16S220J
R	207	RS1/16S101J
R	208	RS1/16S102J
R	214	RS1/16S822J
R	215	RS1/16S822J
R	217	RS1/16S102J
R	231	RS1/16S272J
R	237	RS1/16S103J
R	238	RS1/16S104J
R	240	RS1/16S332J
R	241	RS1/16S202J
R	247	RS1/16S123J

CAPACITORS

=====Circuit Symbol & No.===		Part No.
C	1	CCSQCH6R0D50
C	2	CCSRCK2R0C50
C	4	CCSRCH820J50
C	6	CCSRCH820J50
C	8	CKSRYB103K25
C	9	CKSQYB104K16
C	10	CCSRCKR50C50
C	11	CEJA1R0M50
C	12	CKSRYB222K50
C	13	CKSRYB222K50
C	14	CCSRCH220J50
C	16	CCSRCH8R0D50
C	17	CKSRYB222K50
C	18	CKSRYB103K25
C	19	CKSRYB222K50

=====Circuit Symbol & No.===Part Name			Part No.
C	20		CKSRYB222K50
C	21		CEJA100M16
C	22		CCSRTH9R0D50
C	23		CCSRTH120J50
C	24		CCSRCH471J50
C	25		CKSRYB103K25
C	31		CKSRYB103K25
C	32		CKSQYB472K50
C	33		CCSRCH5R0C50
C	34		CKSQYB104K16
C	36		CCSRRH201J50
C	51		CKSRYB223K25
C	52		CKSRYB103K25
C	54		CCSRCH470J50
C	55		CKSQYB223K25
C	56		CKSQYB104K16
C	57		CKSRYB472K50
C	58		CEJA330M10
C	59		CKSRYB103K25
C	61		CCSRCH270J50
C	62		CKSRYB103K25
C	63		CEJAR15M50
C	101		CEJANP100M10
C	102		CKSRYB182K50
C	103		CKSRYB682K25
C	104		CEJA2R2M50
C	105		CKSRYB103K25
C	106		CCSRCH151J50
C	107		CKSRYB103K25
C	151		CKSRYB472K50
C	152		CKSQYB104K16
C	153		CEJA3R3M50
C	154		CKSQYB104K16
C	157		CEJA3R3M50
C	158		CKSYB474K16
C	159		CEJA220M6R3
C	160		CKSQYB104K16
C	161		CKSQYB104K16
C	162		CEJA3R3M50
C	163		CKSRYB102K50
C	170		CCSRCH100D50

A Unit Number : CWM5173(KEH-P26R)
Unit Name : Tuner Amp Unit

MISCELLANEOUS

IC	201	IC	HA12197F
IC	301	IC	PM2005B
IC	401	IC	SN761027DL
IC	501	IC	HA13155
IC	601	IC	PD4743A
IC	602	IC	S-80734AN
IC	603	IC	CA0008AM
IC	604	IC	TA2050S
IC	701	IC	PMW001B
IC	702	IC	NJM2903M
IC	801	IC	TPD1018F
Q	301	Transistor	2SC1740S
Q	302	Transistor	DTC114ES
Q	401	Transistor	DTC343TK
Q	402	Transistor	DTC343TK
Q	403	Transistor	DTA124EK
Q	501	Transistor	DTC124ES
Q	502	Transistor	DTC124ES
Q	601	Transistor	DTC143TS
Q	602	Transistor	DTC124ES

=====Circuit Symbol & No.===Part Name			Part No.
Q	603	Transistor	2SC1740S
Q	606	Transistor	DTC114EK
Q	607	Transistor	2SA1037K
Q	608	Transistor	DTA124ES
Q	609	Transistor	DTC143TS
Q	610	Transistor	DTC143TS
Q	611	Transistor	2SC1740S
Q	612	Transistor	2SC2412K
Q	613	Transistor	2SC2412K
Q	701	Transistor	DTC143TS
Q	702	Transistor	2SC1740S
Q	703	Transistor	2SD1468S
Q	704	Transistor	2SD1468S
Q	801	Transistor	2SD2037
Q	802	Transistor	2SB1243
Q	803	Transistor	2SC2412K
Q	804	Transistor	2SD2396
Q	807	Transistor	2SA1674
Q	808	Transistor	2SC2412K
Q	809	Transistor	2SA933S
Q	810	Transistor	2SB1242
Q	811	Transistor	DTC143TK
D	201	Diode	1SS270
D	501	Diode	CWW1352-B
D	601	Diode	1SS270
D	602	Diode	HZS7L(A1)
D	603	Diode	1SS270
D	604	Diode	1SS270
D	605	Diode	1SS270
D	606	Diode	1SS270
D	607	Diode	1SS270
D	608	Diode	1SS270
D	609	Diode	1SS270
D	610	Diode	1SS270
D	611	Diode	1SS270
D	612	Diode	HZS9L(A2)
D	613	Diode	HZS7L(C3)
D	614	Diode	HZS7L(A1)
D	615	Diode	1SS270
D	616	Diode	1SS270
D	701	Diode	1SS270
D	801	Diode	1SR139-400
D	802	Diode	1SR139-400
D	803	Diode	1SR139-400
D	804	Diode	MA8056(H)
D	805	Diode	MA8091(M)
D	806	Diode	1SR139-400
D	807	Diode	1SR139-400
L	301	Ferri-Inductor	LAU101K
L	302	Ferri-Inductor	LAU101K
L	601	Ferri-Inductor	LAU101K
L	602	Ferri-Inductor	LAU101K
L	603	Ferri-Inductor	LAU101K
L	604	Ferri-Inductor	LAU2R2K
L	701	Ferri-Inductor	LAU101K
L	951	600H	CTH1168
X	301	Crystal Resonator 7.200MHz	CSS1379
X	601	Ceramic Resonator 6.29MHz	CSS1310
X	701	Crystal Resonator 4.332MHz	CSS1056
VR	701	Semi-fixed 22kΩ(B)	CCP1321
		FM/AM Tuner Unit	CWE1420

RESISTORS

R	201	RS1/10S473J
R	202	RS1/10S473J
R	203	RS1/10S181J
R	204	RS1/10S181J
R	205	RS1/10S274J

=====Circuit Symbol & No.===Part Name			Part No.
R	206		RS1/10S274J
R	207		RS1/10S133J
R	208		RS1/10S133J
R	209		RS1/10S183J
R	210		RS1/10S183J
R	211		RS1/10S472J
R	212		RS1/10S472J
R	213		RS1/10S512J
R	214		RS1/10S512J
R	219		RD1/4PU273J
R	220		RD1/4PU273J
R	301		RS1/10S272J
R	302		RS1/10S272J
R	305		RS1/10S0R0J
R	306		RD1/4PU222J
R	307		RS1/8S222J
R	308		RS1/8S222J
R	310		RS1/10S0R0J
R	311		RS1/8S272J
R	312		RD1/4PU222J
R	314		RS1/8S0R0J
R	315		RS1/10S0R0J
R	318		RS1/10S0R0J
R	319		RS1/10S472J
R	320		RS1/10S682J
R	321		RS1/10S472J
R	322		RS1/10S681J
R	323		RS1/10S682J
R	324		RD1/4PU102J
R	326		RD1/4PU0R0J
R	328		RS1/10S561J
R	333		RS1/8S393J
R	334		RD1/4PU562J
R	335		RD1/4PU472J
R	336		RD1/4PU473J
R	337		RS1/10S473J
R	338		RD1/4PU104J
R	339		RS1/10S473J
R	340		RS1/10S473J
R	341		RS1/10S681J
R	342		RS1/10S681J
R	343		RD1/4PU681J
R	344		RD1/4PU681J
R	345		RD1/4PU222J
R	346		RS1/8S472J
R	349		RD1/4PU102J
R	350		RS1/10S510J
R	352		RS1/10S0R0J
R	353		RS1/10S0R0J
R	354		RD1/4PU102J
R	355		RS1/8S0R0J
R	403		RS1/10S272J
R	404		RS1/10S272J
R	405		RS1/10S151J
R	406		RS1/10S151J
R	407		RS1/10S221J
R	408		RS1/10S221J
R	409		RS1/10S821J
R	410		RS1/10S821J
R	411		RS1/10S223J
R	412		RS1/10S223J
R	501		RD1/4PU202J
R	502		RD1/4PU202J
R	503		RD1/4PU202J
R	504		RD1/4PU202J
R	505		RS1/10S222J
R	506		RS1/10S222J
R	507		RS1/10S222J
R	508		RS1/10S222J
R	509		RD1/4PU2R2J

=====Circuit Symbol & No.===Part Name			Part No.
R	510		RD1/4PU2R2J
R	511		RD1/4PU2R2J
R	512		RD1/4PU2R2J
R	513		RD1/4PU2R2J
R	514		RD1/4PU2R2J
R	515		RD1/4PU2R2J
R	516		RD1/4PU2R2J
R	517		RD1/4PU103J
R	518		RS1/10S153J
R	519		RS1/10S221J
R	520		RS1/10S101J
R	521		RS1/8S103J
R	601		RS1/10S104J
R	602		RS1/8S104J
R	603		RS1/10S473J
R	605		RS1/10S0R0J
R	607		RD1/4PU0R0J
R	610		RD1/4PU473J
R	612		RS1/8S473J
R	613		RS1/10S473J
R	614		RS1/10S473J
R	615		RS1/10S222J
R	616		RS1/10S222J
R	617		RS1/10S222J
R	618		RD1/4PU103J
R	619		RS1/8S473J
R	620		RS1/10S473J
R	621		RD1/4PU104J
R	622		RS1/10S473J
R	623		RD1/4PU473J
R	624		RS1/10S332J
R	625		RS1/10S102J
R	629		RS1/10S103J
R	630		RD1/4PU152J
R	631		RS1/10S102J
R	632		RS1/10S124J
R	633		RS1/10S102J
R	634		RS1/10S102J
R	635		RS1/10S102J
R	636		RD1/4PU473J
R	637		RD1/4PU473J
R	638		RS1/10S101J
R	639		RS1/10S101J
R	640		RS1/10S620J
R	641		RS1/10S181J
R	642		RS1/10S181J
R	643		RS1/10S223J
R	644		RS1/10S223J
R	645		RS1/10S102J
R	646		RS1/10S102J
R	647		RD1/4PU223J
R	648		RD1/4PU223J
R	649		RS1/10S223J
R	650		RS1/8S472J
R	651		RD1/4PU222J
R	652		RS1/10S104J
R	653		RS1/10S104J
R	655		RS1/10S223J
R	656		RS1/10S103J
R	657		RD1/4PU472J
R	658		RS1/10S473J
R	659		RS1/10S223J
R	660		RD1/4PU473J
R	661		RS1/10S473J
R	662		RD1/4PU223J
R	663		RD1/4PU473J
R	664		RS1/10S222J
R	665		RS1/10S102J
R	667		RD1/4PU0R0J
R	668		RS1/10S0R0J

=====Circuit Symbol & No.===Part Name			Part No.
R	670		RS1/8S0R0J
R	673		RS1/10S0R0J
R	701		RD1/4PU102J
R	702		RD1/4PU102J
R	703		RS1/8S102J
R	704		RD1/4PU102J
R	705		RS1/10S102J
R	706		RS1/10S0R0J
R	707		RS1/10S333J
R	708		RS1/10S102J
R	709		RS1/10S562J
R	710		RS1/10S222J
R	711		RS1/10S222J
R	712		RS1/10S562J
R	713		RS1/10S684J
R	714		RS1/8S103J
R	715		RS1/10S224J
R	716		RS1/10S224J
R	717		RS1/10S222J
R	718		RS1/10S222J
R	719		RS1/10S223J
R	720		RS1/10S223J
R	721		RS1/10S105J
R	722		RS1/10S224J
R	723		RS1/10S562J
R	724		RS1/10S681J
R	725		RD1/4PU681J
R	726		RS1/10S681J
R	727		RS1/10S102J
R	801		RD1/4PU102J
R	802		RS1/10S472J
R	803		RS1/10S101J
R	804		RD1/4PU332J
R	805		RS1/10S103J
R	806		RD1/4PU102J
R	807		RD1/4PU122J
R	812		RS1/10S103J
R	813		RS1/10S102J
R	814		RS1/10S473J
R	816		RS1/10S472J
R	817		RS1/10S223J
R	818		RS1/10S222J
R	819		RS1/10S472J
R	820		RD1/4PU102J
R	821		RD1/4PU1R5J
R	822		RD1/4PU1R5J
R	823		RD1/4PU1R0J
R	824		RS1/10S103J
R	825		RS1/10S103J
CAPACITORS			
C	201		CKSQYB561K50
C	202		CKSQYB561K50
C	205		CKSQYB103K25
C	206		CKSQYB103K25
C	207		CEALR47M50
C	208		CEALR47M50
C	209		CEJA1R0M50
C	210		CEJA1R0M50
C	213		CEAL220M16
C	219		CKSQYB104K16
C	220		CEAL100M16
C	223		CKSQYB105K10
C	224		CKSQYB105K10
C	225		CEAL470M6R3
C	226		CEAL470M6R3

=====Circuit Symbol & No.===Part Name			Part No.
C	301		CKSQYB223K25
C	302		CKSQYB223K25
C	303		CKSQYB223K25
C	308		CCSQCH101K50
C	311		CCSQCH101K50
C	313		CKSQYB223K25
C	314		CKSQYB103K25
C	315		CEAL220M6R3
C	316		CKSQYB103K25
C	318		CKSQYB102K50
C	319		CEAL220M16
C	320		CCSQCH150J50
C	321		CCSQCH150J50
C	322		CKSQYB103K25
C	323		CKSQYB103K25
C	327		CKSQYB332K50
C	331		CKSQYB104K16
C	332		CEAL220M6R3
C	333		CKSQYB103K25
C	334		CEAL220M6R3
C	335		CKSQYB103K25
C	336		CKSQYB223K25
C	340	4.7µF/16V	CCH1165
C	341		CKSQYB103K25
C	342		CKSQYB473K16
C	343		CKSQYB102K50
C	401		CEJA2R2M50
C	402		CEJA2R2M50
C	403		CEJANP100M10
C	404		CEJANP100M10
C	405		CKSQYB822K50
C	406		CKSQYB822K50
C	407		CEJA1R0M50
C	408		CEJA1R0M50
C	409		CKSQYB183K25
C	410		CKSQYB183K25
C	411		CKSQYB102K50
C	412		CKSQYB102K50
C	413		CEJANP2R2M35
C	414		CEJANP2R2M35
C	415		CKSQYB333K25
C	416		CKSQYB333K25
C	417		CEJA220M6R3
C	418		CEJA2R2M50
C	419		CKSQYB104K16
C	420		CKSQYB103K25
C	421		CEJA2R2M50
C	422		CEJA2R2M50
C	423		CEJA470M10
C	424		CKSQYB104K16
C	425		CKSYB105K16
C	426		CKSYB105K16
C	501		CEJA4R7M35
C	502		CEJA4R7M35
C	503		CEJA4R7M35
C	504		CKSQYB102K50
C	505		CKSQYB102K50
C	506		CKSQYB102K50
C	507		CKSQYB102K50
C	508		CKSQYB104K16
C	509		CKSQYB104K16
C	510		CKSQYB104K16
C	511		CKSQYB104K16
C	512		CKSQYB104K16
C	513		CKSQYB104K16

=====Circuit Symbol & No.	===	Part Name	Part No.
C	514		CKSQYB104K16
C	515		CKSQYB104K16
C	516		CKSQYB104K16
C	517		CEJA330M10
C	518		CEJA100M16
C	519		CKSQYB104K16
C	520		CKSQYB104K16
C	601		CCSQCH101K50
C	602		CEAL4R7M35
C	604		CCSQCH101K50
C	606		CKSQYB104K16
C	607		CKSQYB224K16
C	608		CEJA2R2M50
C	609		CKSQYB102K50
C	610		CKSQYB104K16
C	611		CEJA1R0M50
C	612		CEJA1R0M50
C	613		CEJA1R0M50
C	614		CEJA1R0M50
C	615		CEJA100M16
C	616		CEJA100M16
C	617		CEJA4R7M35
C	618		CEJA4R7M35
C	619		CKSQYB102K50
C	620		CCSQCH101K50
C	621		CCSQCH101J50
C	623		CKSQYB102K50
C	701		CEAL4R7M35
C	702		CKSQYB104K16
C	703		CCSQCH220J50
C	704		CCSQCH220J50
C	705		CKSQYB472K50
C	706		CKSQYB104K16
C	707		CKSYB105K16
C	708		CKSQYB104K16
C	709		CKSQYB222K50
C	710		CKSQYB104K16
C	711		CKSQYB104K16
C	712		CKSQYB223K25
C	713		CEAL4R7M35
C	714		CKSQYB103K25
C	715		CKSQYB103K25
C	716		CKSQYB223K25
C	717		CKSQYB471K50
C	801	3300µF/16V	CCH1018
C	802	470µF/16V	CCH1183
C	803		CKSQYB102K50
C	804		CKSQYB473K16
C	805		CEJA101M10
C	806		CKSQYB103K25
C	807	330µF/10V	CCH1181
C	808		CKSQYB103K25
C	809		CKSQYB104K16
C	811	100µF/16V	CCH1179

D Unit Number : CWM5183(KEH-P26R)
Unit Number : CWM5189(KEH-2520R)
Unit Name : Key Board Unit

MISCELLANEOUS

IC	901	IC	PD6196A
D	901	Diode	STZ6R2N
L	901	Ferri-Inductor	LAU101K
X	901	Ceramic Resonator 4.97MHz	CSS1312
S	901	Switch	CSG1081

=====Circuit Symbol & No.	===	Part Name	Part No.
S	902	Switch	CSG1081
S	903	Switch	CSG1093
S	904	Switch	CSG1093
S	905	Switch	CSG1093
S	906	Switch	CSG1093
S	907	Switch	CSG1093
S	908	Switch	CSG1093
S	909	Switch	CSG1093
S	910	Switch	CSG1093
S	911	Switch	CSG1081
S	912	Switch	CSG1093
S	913	Switch	CSG1081
S	914	Switch	CSG1093
S	915	Switch	CSG1081
S	916	Switch	CSG1093
S	917	Switch	CSG1081
S	918	Switch	CSG1081
S	919	Switch	CSG1093
S	920	Switch	CSG1093
IL	901	Lamp 14V 40mA	CEL1479
IL	902	Lamp 14V 40mA	CEL1479
IL	903	Lamp 14V 40mA	CEL1479
IL	904	Lamp 14V 40mA	CEL1479
IL	905	Lamp 14V 40mA	CEL1479
LCD	901	LCD	CAW1391

RESISTORS

R	901		RS1/10S222J
R	902		RS1/10S222J
R	903		RS1/10S472J
R	906		RS1/10S473J
R	907		RS1/10S473J
R	908		RS1/10S473J
R	909		RS1/10S473J
R	910		RS1/10S473J
R	911		RS1/10S473J
R	912		RS1/10S473J
R	914		RS1/10S0R0J
R	916		RS1/10S0R0J

CAPACITORS

C	901		CEAL100M16
C	904		CKSQYB104K50
C	905		CKSQYB102K50
C	906		CCSCH101J50

C Unit Number :
Unit Name : Cassette PCB

S	1	Switch(Load)	ESN1016
S	2	Switch(Mute)	ESN1017
S	3	Switch(FWD/REV)	ESH1006
S	4	Switch(Eject)	ESG1002
R	1		RD1/4HM472J

Miscellaneous Parts List

M	1	Motor Unit	EXA1467
HD	1	Head Assy	EXA1466

● The KEH-2520R/X1M/GR Tuner Amp Unit Parts Lists enumerated the parts which differ from those enumerated in the KEH-P26R/X1M/GR Parts List only. The parts other than those enumerated in the former are identical with those in the latter, to which you are requested to refer, accordingly. The KEH-P26R/X1M/GR Tuner Amp Unit Parts List is given on page 27.

Tuner Amp Unit

Circuit Symbol & No.	KEH-P26R/X1M/GR Part No.	KEH-2520R/X1MGR Part No.
IC 601	PD4743A	PD4744A
IC 603	CA0008AM	·····
IC 604	TA2050S	·····
Q 401,402	DTC143TK	·····
Q 403	DTA124EK	·····
Q 606	DTC114EK	·····
Q 607	2SA1037K	·····
L 604	LAU2R2K	·····
X 601	CSS1310 (6.29MHz)	CSS1047 (4.194MHz)
R 409,410	RS1/10S821J	·····
R 411,412,643,644,649	RS1/10S223J	·····
R 605	RS1/10S0R0J	·····
R 607	RD1/4PU0R0J	·····
R 633,634,635,645,646,665	RS1/10S102J	·····
R 636,637	RD1/4PU473J	·····
R 638,639	RS1/10S101J	·····
R 640	RS1/10S620J	·····
R 641,642	RS1/10S181J	·····
R 647,648	RD1/4PU223J	·····
R 650	RS1/8S472J	·····
R 651	RD1/4PU222J	·····
R 667	RD1/4PU103J	·····
R 670	RS1/8S0R0J	·····
C 421,422	CEJA2R2M50	·····
C 609	CKSQYB102K50	·····
C 610	CKSQYB104K16	·····
C 611,612,613,614	CEJA1R0M50	·····
C 615,616	CEJA100M16	·····
C 617,618	CEJA4R7M35	·····

6. ADJUSTMENT

● Connection Diagram

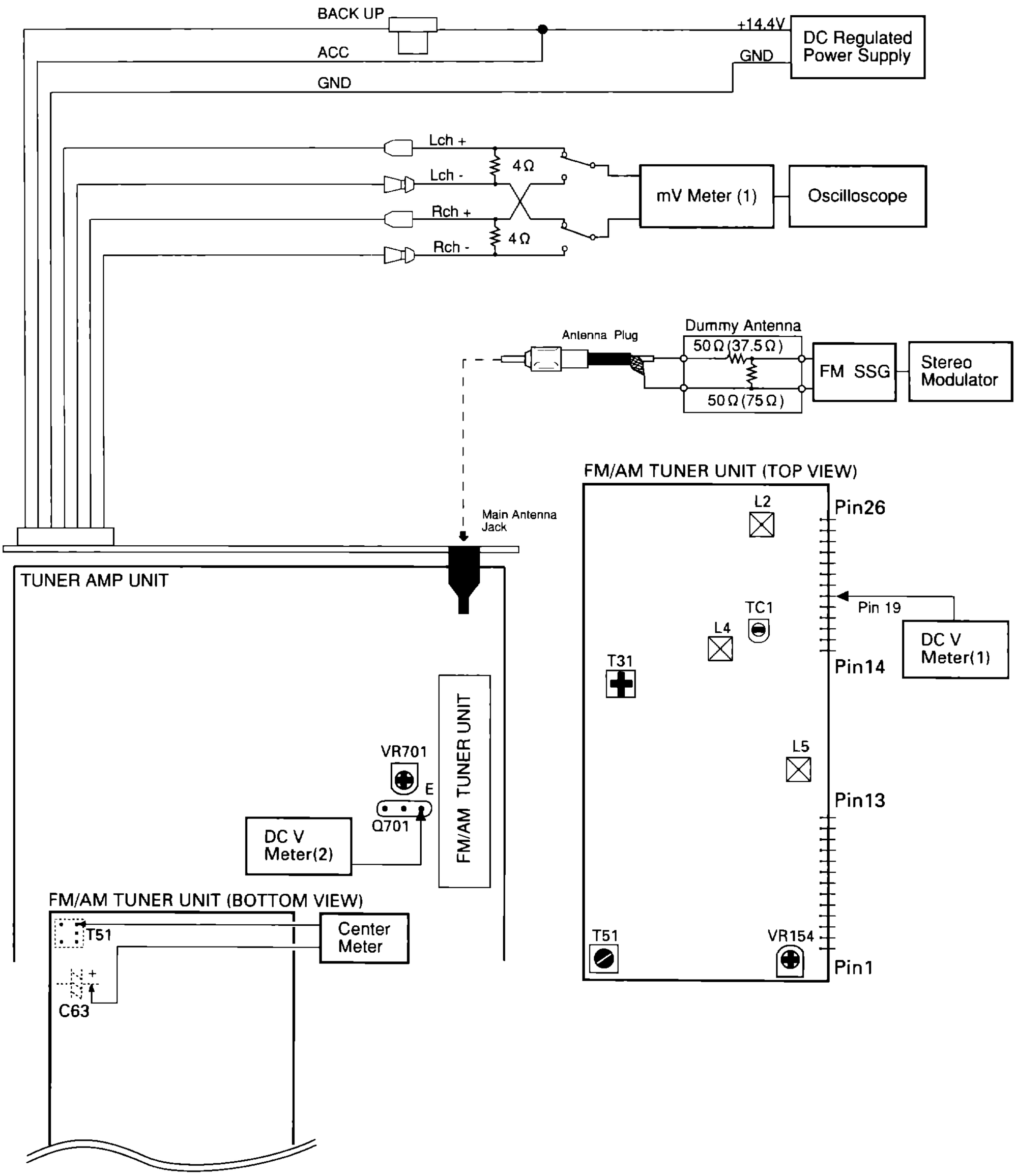


Fig. 16

FM ADJUSTMENT

Modulation M:MONO MOD., 400Hz 30%(22.5kHz Dev.) or 400Hz 100%(75kHz Dev.)
S:STEREO MOD., 1kHz, L or R=30%(20.25kHz+7.5kHz Dev.)
S2:STEREO MOD., 400Hz, L or R=60%(40.50kHz+7.5kHz Dev.)

NOTE:Before proceeding to further adjustments after switching power ON, let the tuner run for ten minutes to allow the circuits to stabilize.

	No.	FM SSG		Displayed	Adjustment	Adjustment Method
		Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
TUN Volt	1	•••••	•••••	108.0	L5	DC V Meter(1) : 6V
IF	2	98.1 M	60	98.1	T51	Center Meter : 0
ANT Coil	3	98.1 M	5	98.1	L2	mV Meter(1) : Maximum
RF Coil	4	98.1 M	5	98.1	L4	mV Meter(1) : Maximum
Image	5	129.3 M	60—80	107.9	TC1	mV Meter(1) : Minimum
IFT	6	98.1 M	5	98.1	T31	mV Meter(1) : Maximum (STEREO MODE)
ARC	7	98.1 S	40	98.1	VR154	mV Meter(1) : Separation 5dB (STEREO MODE)

RDS SL ADJUSTMENT

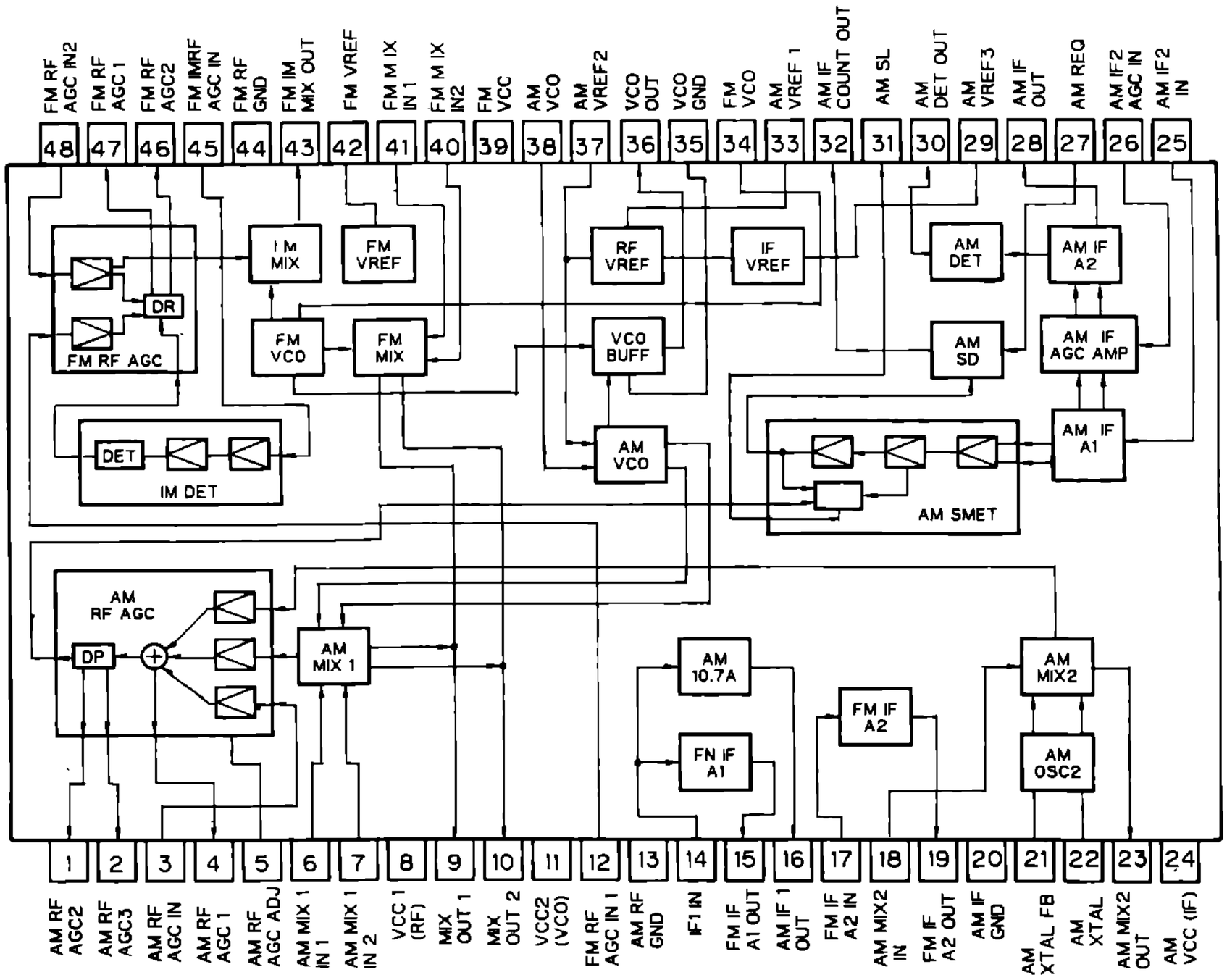
	No.	FM SSG		Displayed	Adjustment	Adjustment Method
		Frequency(MHz)	Level(dBf)	Frequency(MHz)	Point	(Switch Position)
	1	104.0 S2	35	104.0	VR701	DC V Meter(2) : 1.75V+0.05V,-0.35V

7. GENERAL INFORMATION

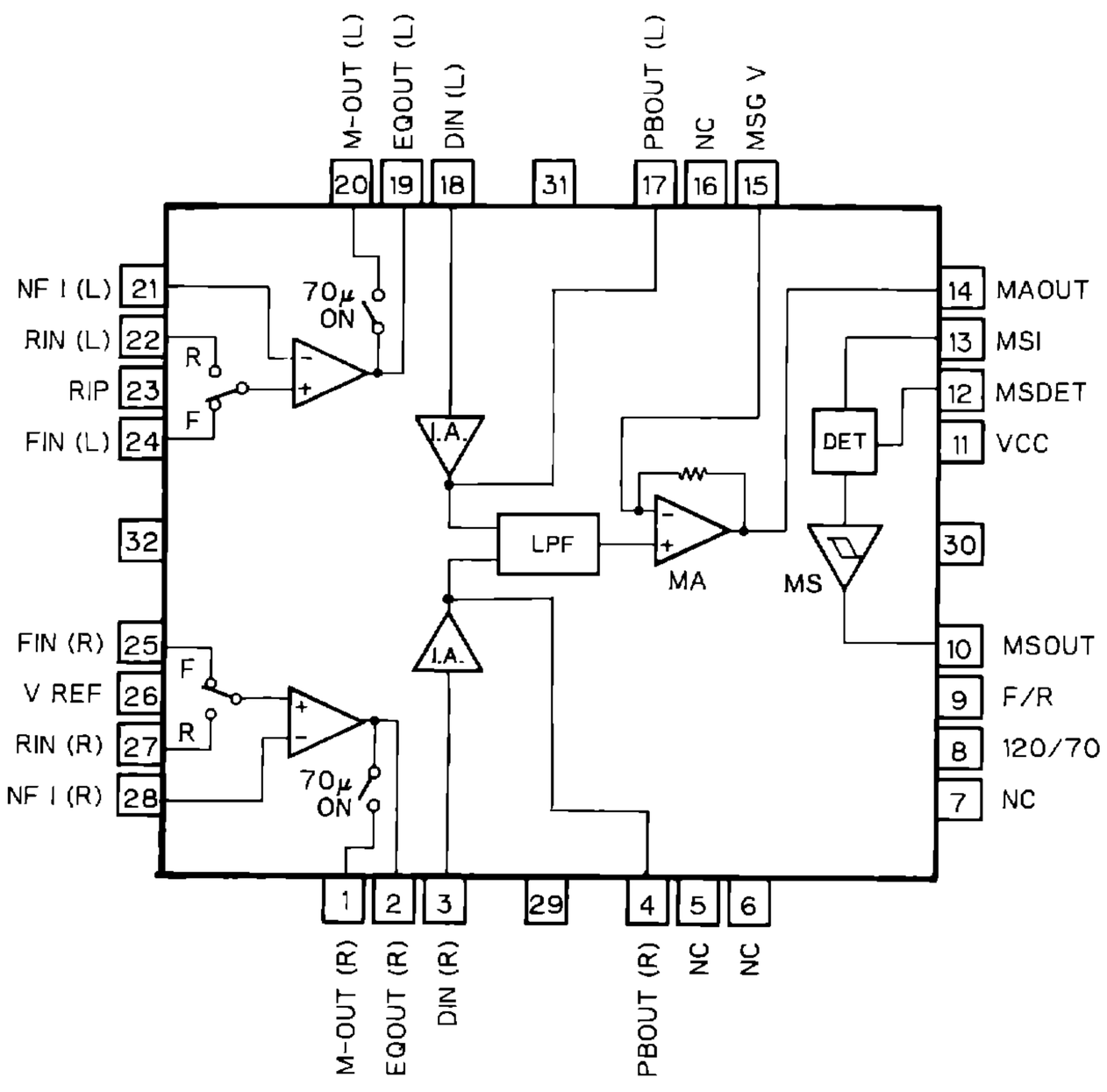
7.1 PARTS

7.1.1 IC

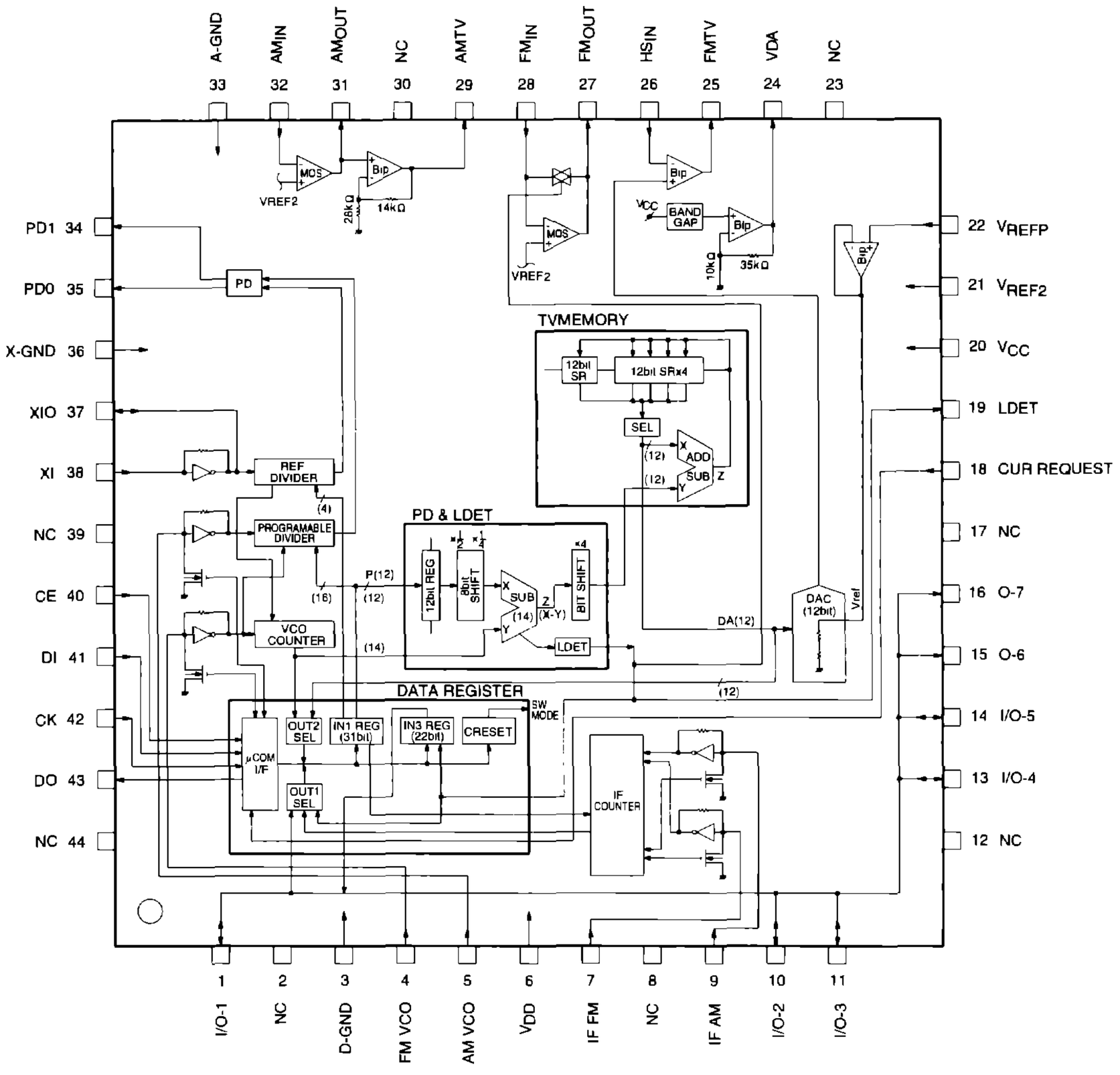
PA4023B



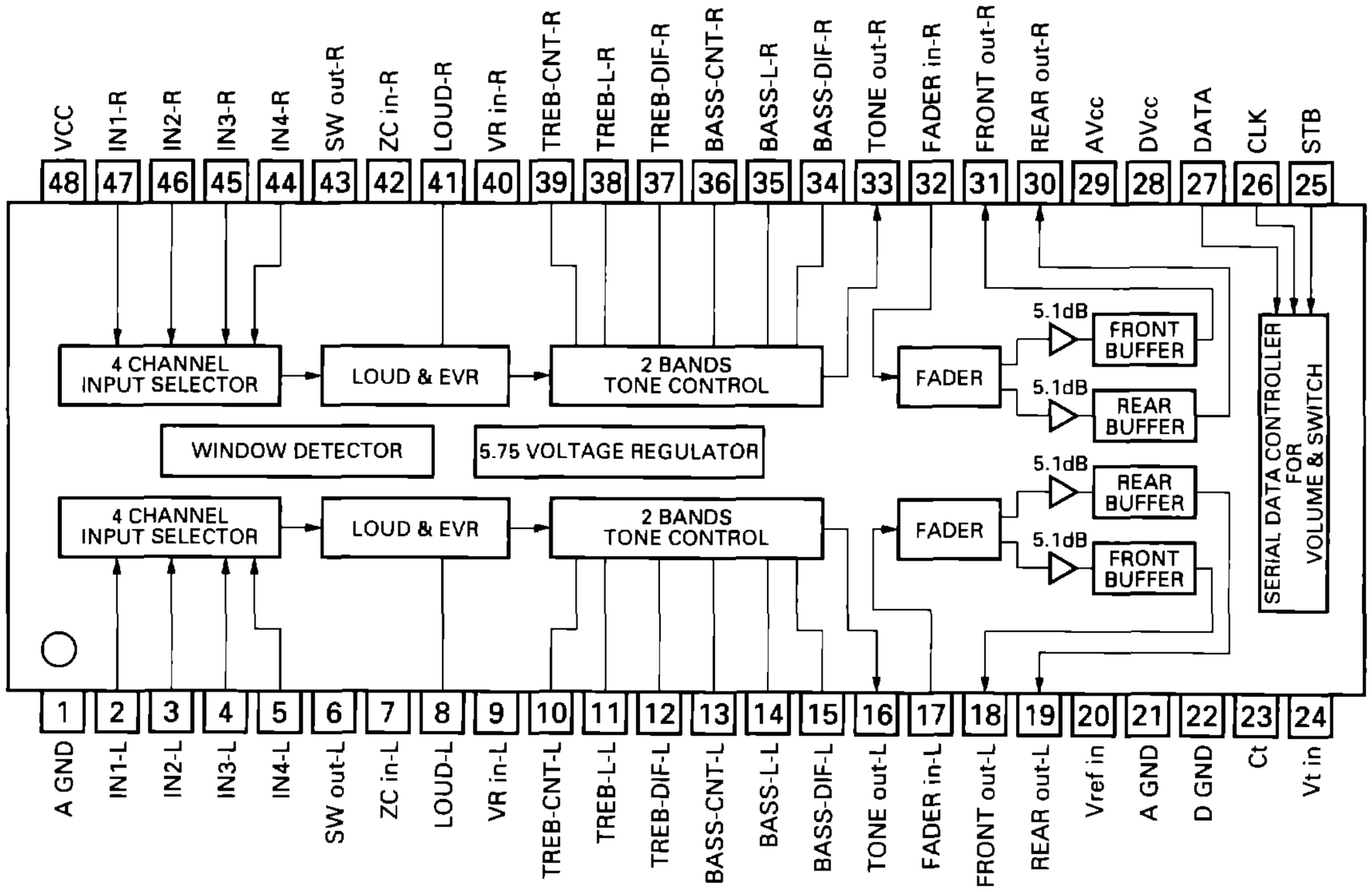
HA12197F



PM2005B



SN761027DL

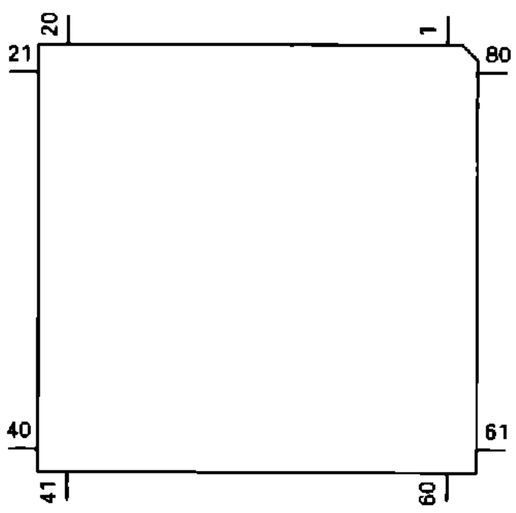


● Pin Functions (PD4743A)

Pin No.	Pin Name	I/O	Format	Function and Operation
1	RDT	I		RDS demodulation data input
2	L/S	O	C	Sensitivity of noise level select
3	ADPW	O	C	Control output for analog input reference power
4	GND			GND
5	DRST	O	C	Decoder reset output
6	MDSENS	I		Modulation detect input
7	AVREF1			(D/A converter standard voltage)
8	KYDT	I		Key data input
9	DPDT	O	C	Key data output
10	DSENS	I		Grille detach sense
11	TUNPDI	I		PLL IC data input
12	TUNPDO	O	C	PLL IC data output
13	TUNPCK	O	C	PLL IC clock
14	TUNPCE	O	C	PLL IC chip enable
15	CURRQ	O	C	Tuner voltage FIX output
16	NC			Not used
17	SK	I		SK signal input
18	MUTCNT	I		NF mute control input
19	RECIVE	O	C	During RDS data reception output
20	NC			Not used
21	EORR	O	C	Correct RDS error output
22	SWVDD	O	C	Grille power supply control output
23	ILMPW	O	C	Illumination power supply control output
24	VDT	O	C	Data output for electronic volume
25	VCK	O	C	Clock output for electronic volume
26	VST	O	C	Strobe pulse output for electronic volume
27	SYSPW	O	C	System power supply control output
28	MUTE	O	C	System mute output
29	DMINH	O	C	Mechanism mute cancel output
30	NC			Not used
31	B.REM	O	C	B remote output
32	EW/BEW	I		Model sense input
33	GND			GND
34–36	NC			Not used
37	TMUTE	O	N	Tuner mute output
38	FM	O	N	FM power control output
39	AM	O	N	AM power control output
40	ASENBO	O	C	Slave power supply control output
41–44	NC			Not used
45	PEE	O	C	Beep tone output
46	NC			Not used
47	RDS57K	I		57kHz BP-OUT sense input
48	NC			Not used
49	MSOUT	O	C	MS output
50	EJECT	I		Eject key input pin
51	TAPLD	I		Tape loading input
52	MECPW	O	C	Mechanism power output
53	MCMUT	I	C	Mechanism mute request
54	NOR/REW	I		Normal reverse input
55	MSIN	I		MS sense
56	TX	O	C	IP BUS data output
57	RX	I		IP BUS data input
58	MTL	O	C	Metal output

Pin No.	Pin Name	I/O	Format	Function and Operation
59	NR	O	C	Dolby output
60	$\overline{\text{RESET}}$	I		Reset Input
61	$\overline{\text{LDET}}$	I		PLL lock sense input
62	$\overline{\text{RCK}}$	I		RDS demodulation clock input
63	CLKIN	I		Clock input
64	$\overline{\text{ASENS}}$	I		ACC power sense input
65	$\overline{\text{BSENS}}$	I		Back up power sense input
66	SD	I		SD input
67	$\overline{\text{ST}}$	I		STEREO input
68	VDD			Power supply
69	X2			Crystal oscillator connection pin
70	X1			Crystal oscillator connection pin
71	GND			GND
72	XT2			Sub clock
73	TESTIN	I		Test program mode input
74	AVDD			Positive power supply terminal for analog circuit
75	AVREF0			(A/D converter standard voltage input)
76	SL	I		Signal level input
77	CL	I		Synchronizing signal input of display data latch
78	NL	I		Noise level input
79	TL	I		Trigger level input
80	$\overline{\text{RDSLK}}$	I		RDS LK signal input

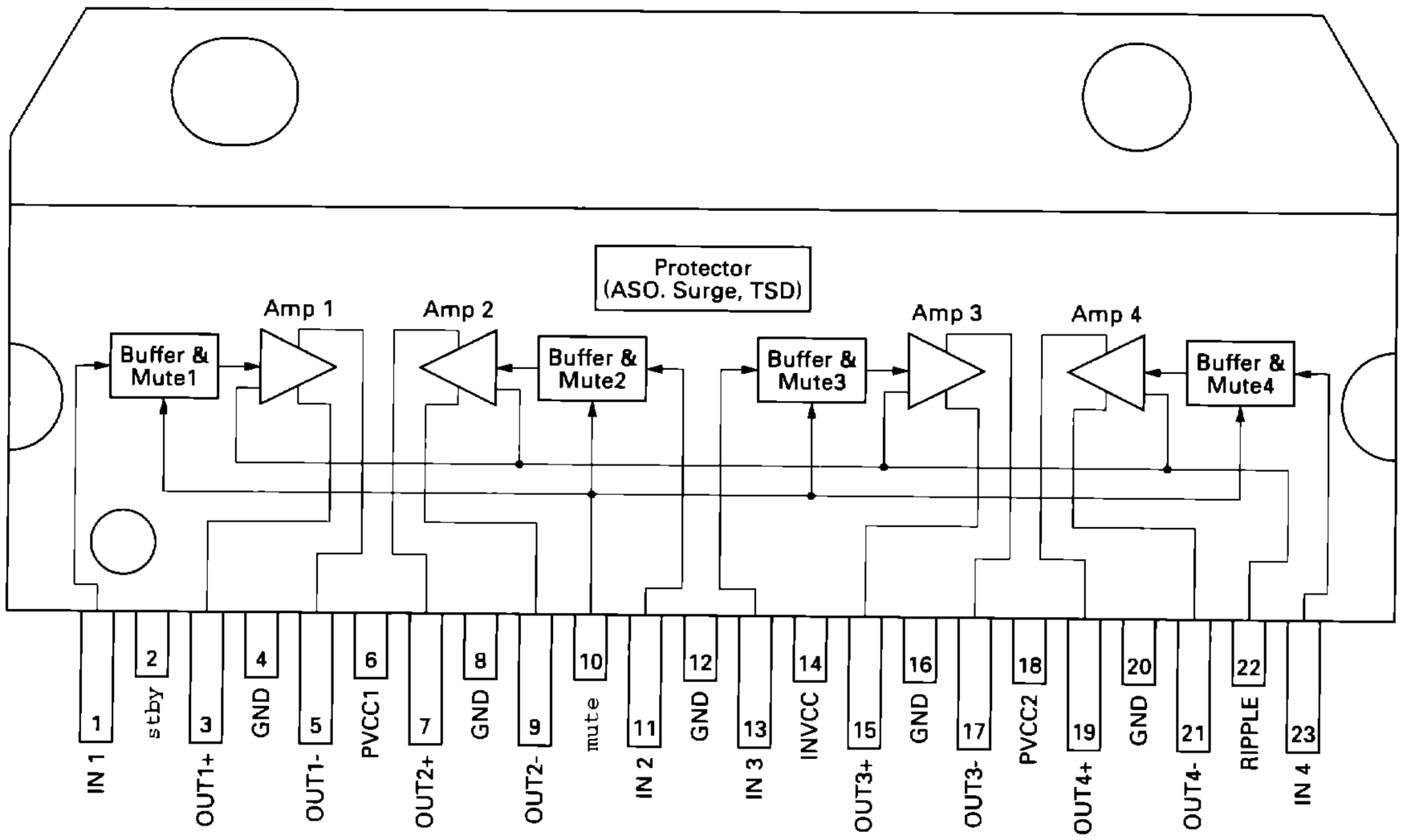
*PD4743A



IC's marked by are MOS type.*
Be careful in handling them because they are very liable to be damaged by electrostatic induction.

Format	Meaning
C	C MOS
N	N channel open drain

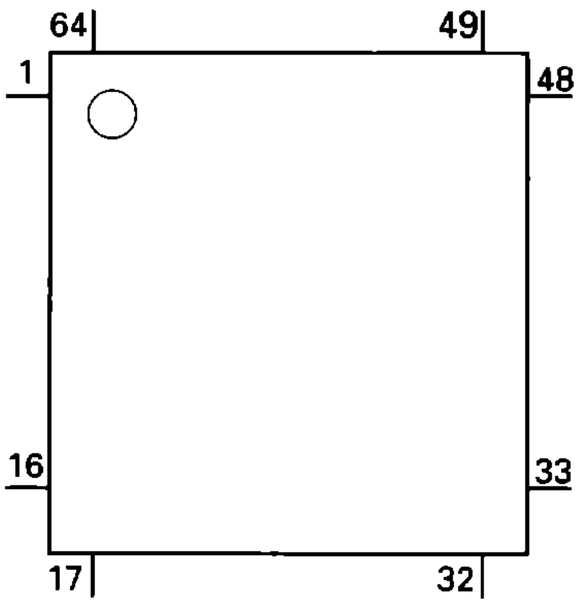
HA13155



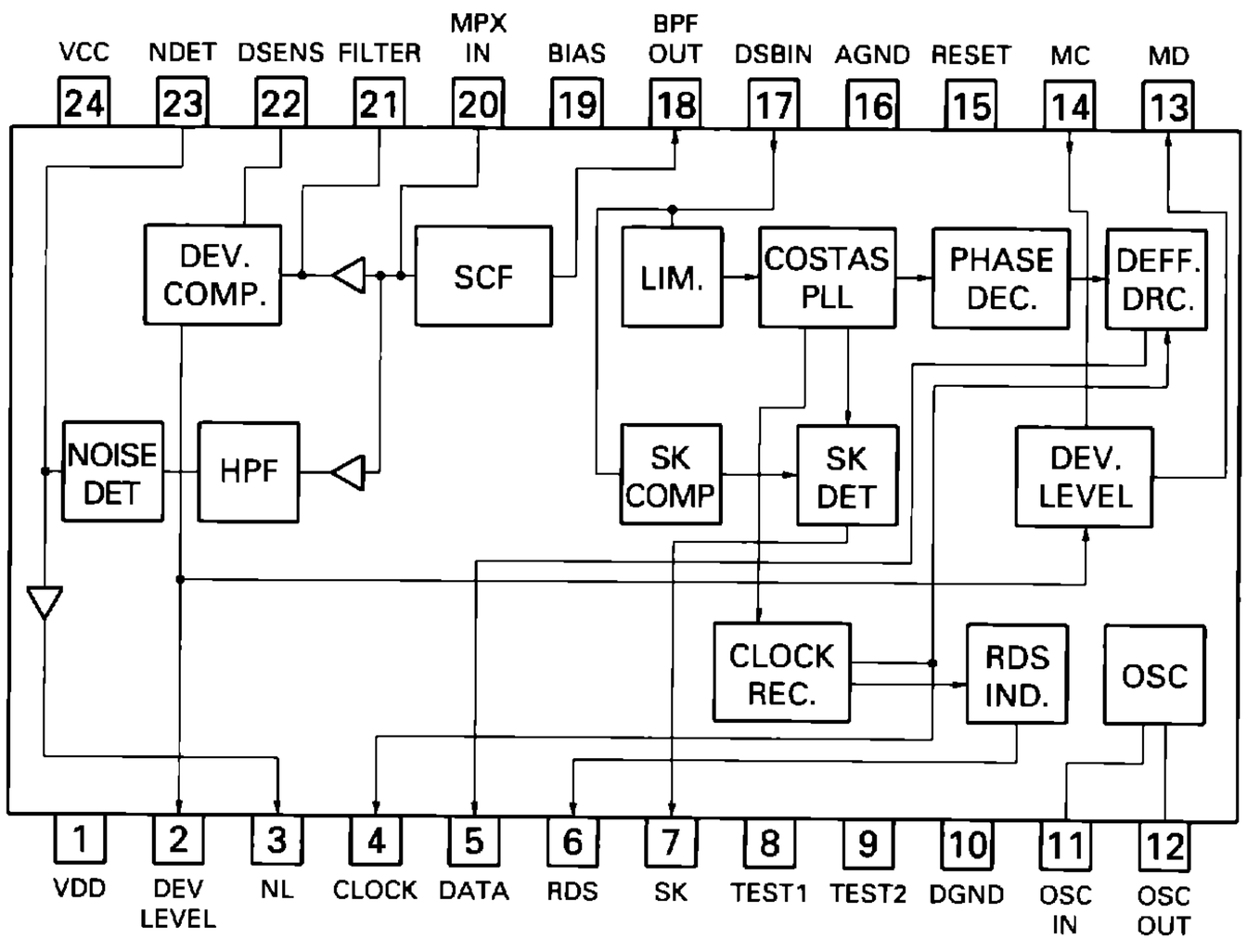
● Pin Functions(PD6196A)

Pin No.	Pin Name	I/O	Function and Operation
1–5	SEG4-0	O	LCD segment output
6–9	COM3-0	O	Common driver output
10	V3		LCD bias power supply
11–14	KS4-1	O	Key strobe output
15,16	KD1,2	I	Key data input
17	REM	I	Remote control reception
18	SI	I	UART input
19	$\overline{RST}$	I	System reset
20	SO	O	UART output
21	MODA		GND
22	X0		Crystal oscillator connection pin
23	X1		Crystal oscillator connection pin
24	VSS		GND
25,26	KD3,4	I	Key data input
27,28	KS6,5	O	Key strobe output
29–55	SEG39-13	O	LCD segment output
56	VCC		5V
57–64	SEG12-5	O	LCD segment output

*PD6196A



PMW001B



7.1.2 DISPLAY

● **CAW1391**

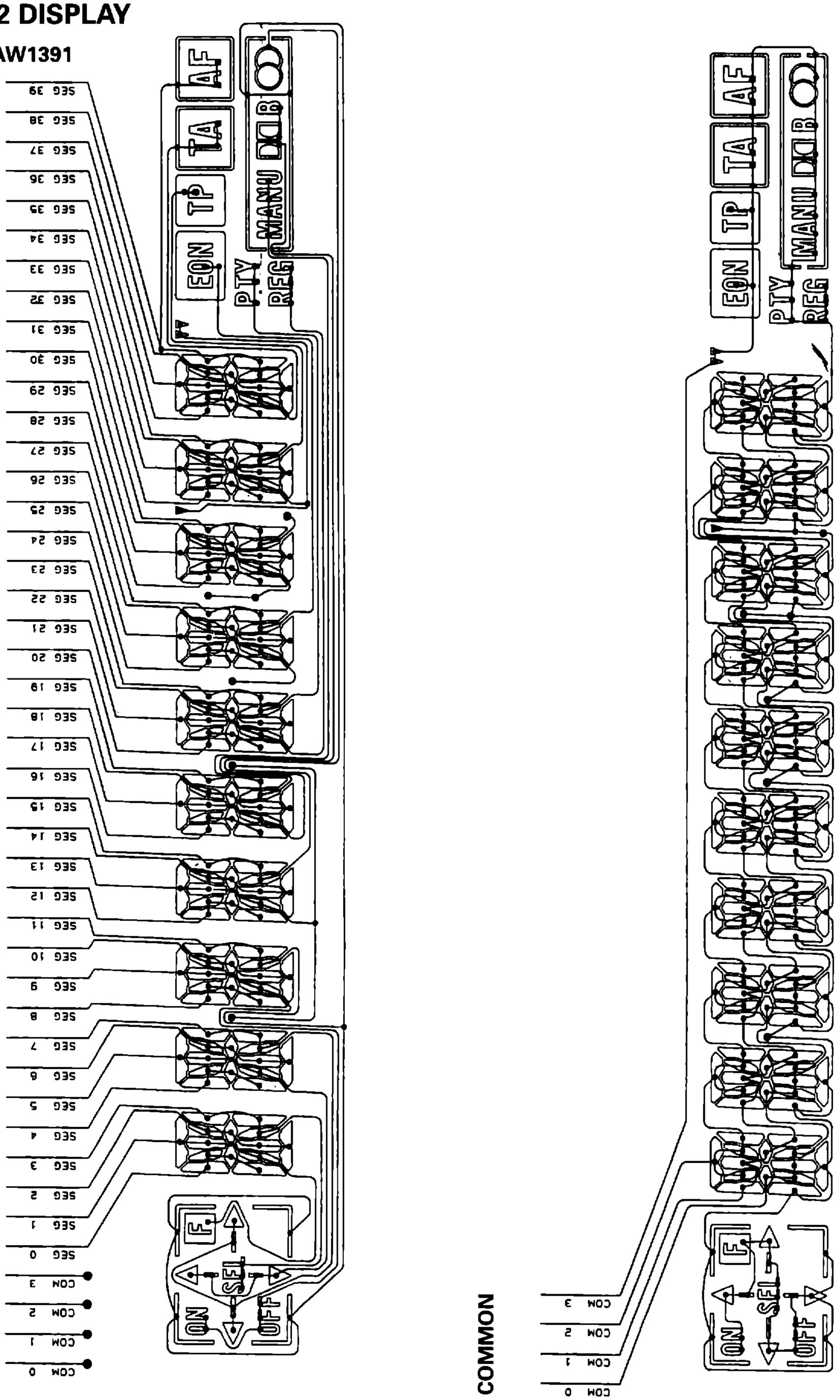


Fig. 17

7.2 DISASSEMBLY

1. Detach Grille Assy

1. A×3

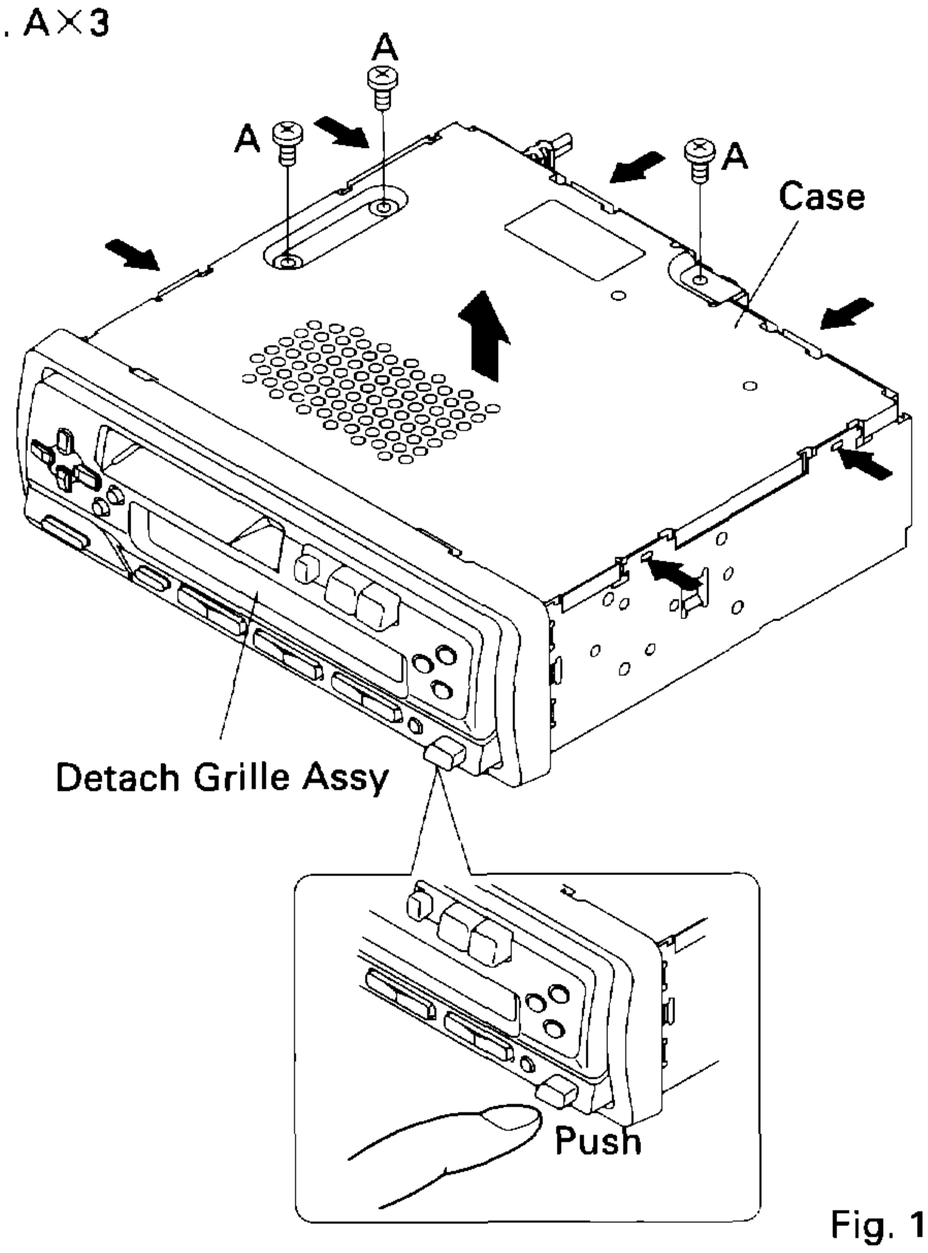


Fig. 18

2. Panel Assy

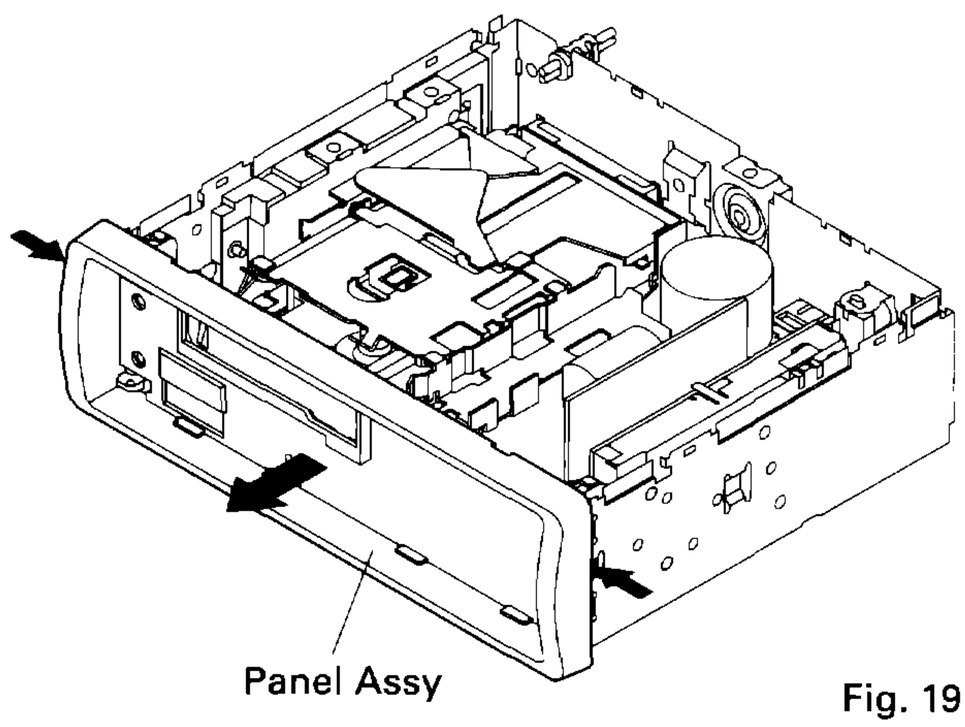


Fig. 19

3. Cassette Mechanism Assy

1. A×4

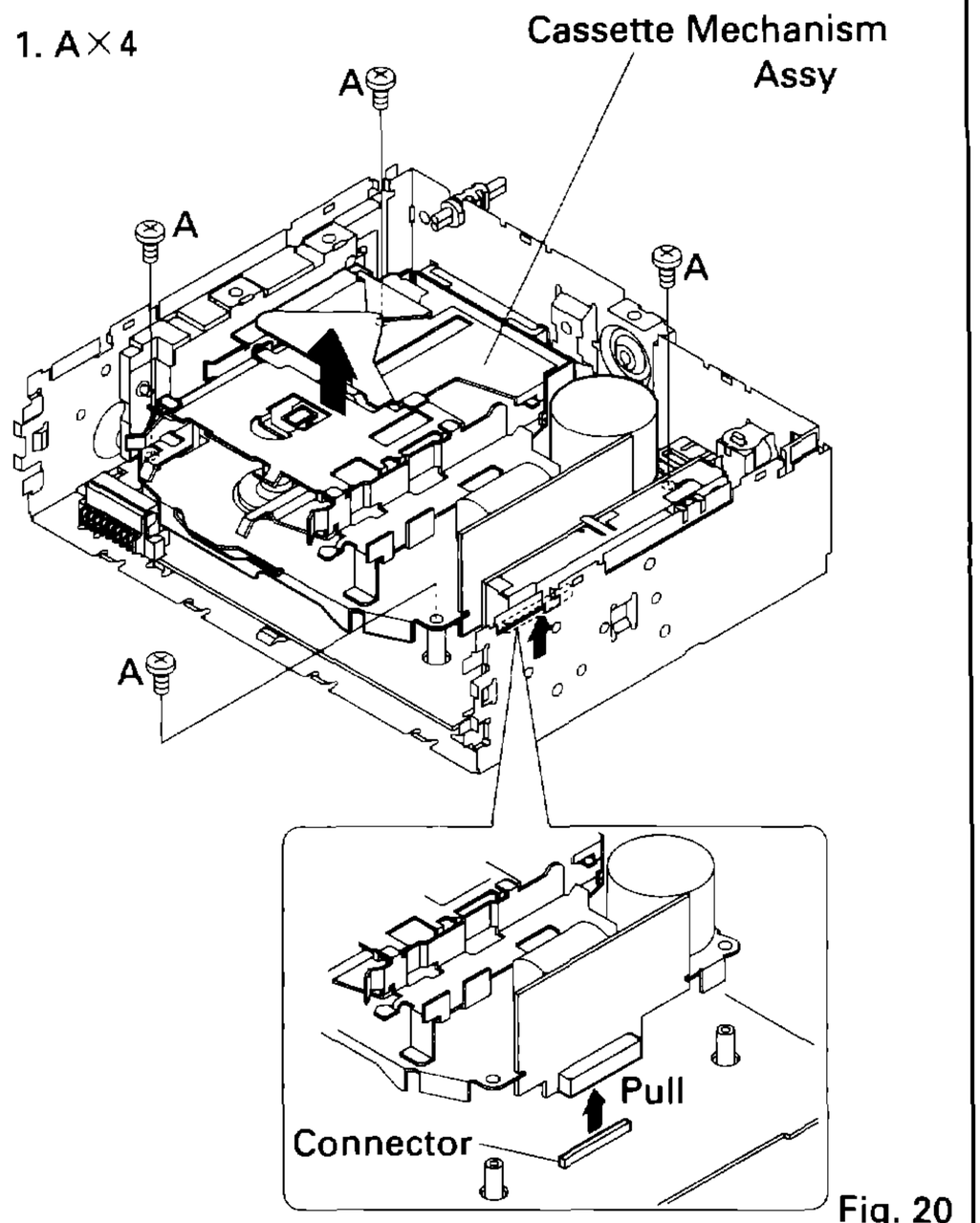


Fig. 20

4. Tuner Amp Unit

1. A×5
2. B×2

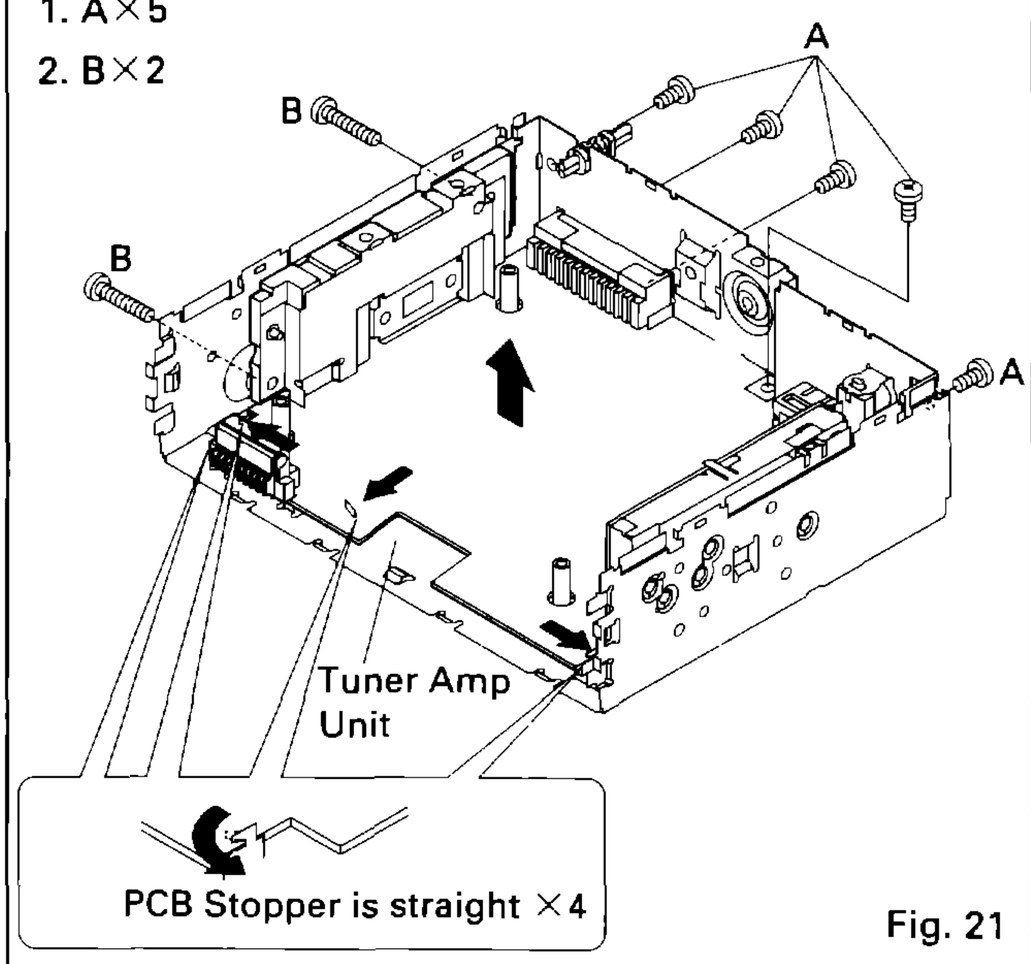
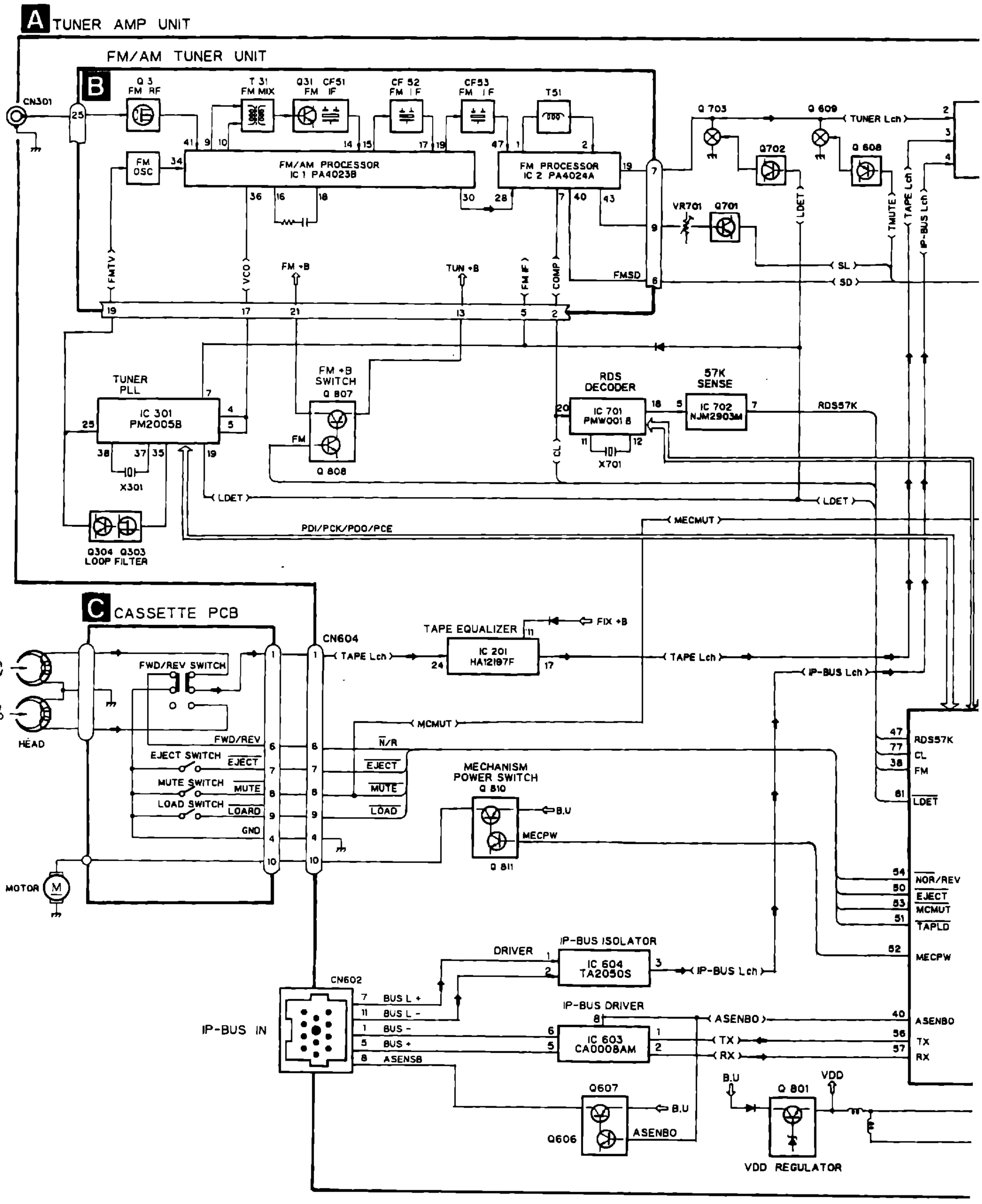


Fig. 21

7.3 BLOCK DIAGRAM(KEH-P26R/X1M/GR)



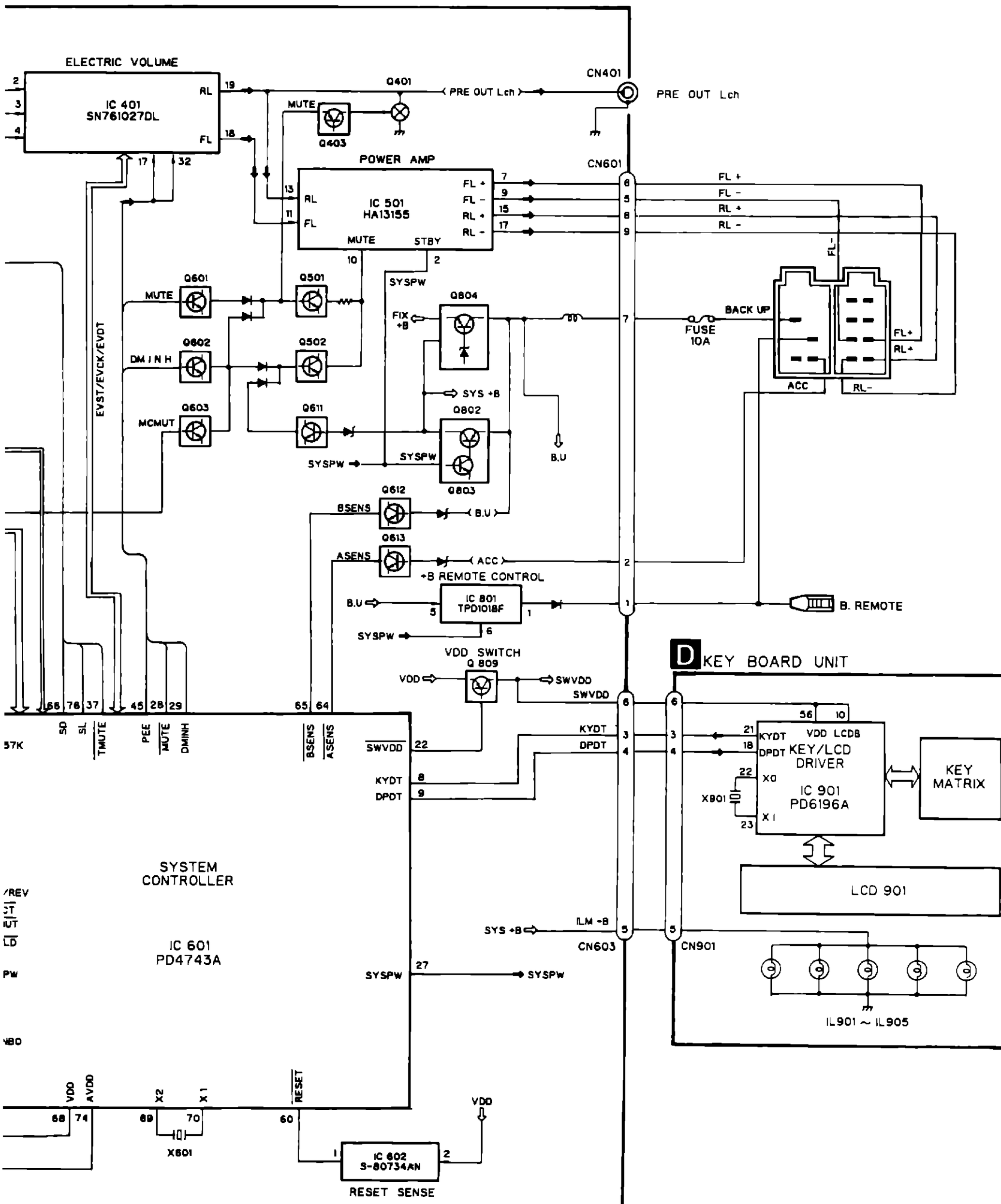

ELECTRIC VOLUME
IC 401
SN761027DL
RL
FL
Q401
PRE OUT Lch
CN401
MUTE
Q403
POWER AMP
IC 501
HA13155
FL +
FL −
RL +
RL −
CN601
MUTE
STBY
Q601
Q501
Q602
Q502
Q603
Q611
Q804
FIX +B
SYSPW
SYS +B
Q802
Q803
B.U
BSENS
Q612
Q613
ASENS
ACC
+B REMOTE CONTROL
IC 801
TPD1018F
BACK UP
FUSE 10A
ACC
RL−
B. REMOTE
VDD SWITCH
Q 809
VDD
SWVDD
D KEY BOARD UNIT
KEY/LCD DRIVER
IC 901
PD6196A
KYDT
DPDT
VDD LCDB
XO
X1
X901
KEY MATRIX
LCD 901
IL901 ~ IL905
CN603
CN901
ILM +B
SYS +B
EVST/EVCK/EVDT
SD
SL
TMUTE
PEE
MUTE
DMINH
BSENS
ASENS
57K
SYSTEM CONTROLLER
IC 601
PD4743A
VDD
AVDD
X2
X1
RESET
X601
IC 602
S-80734AN
RESET SENSE

Fig. 22

8. OPERATIONS AND SPECIFICATIONS

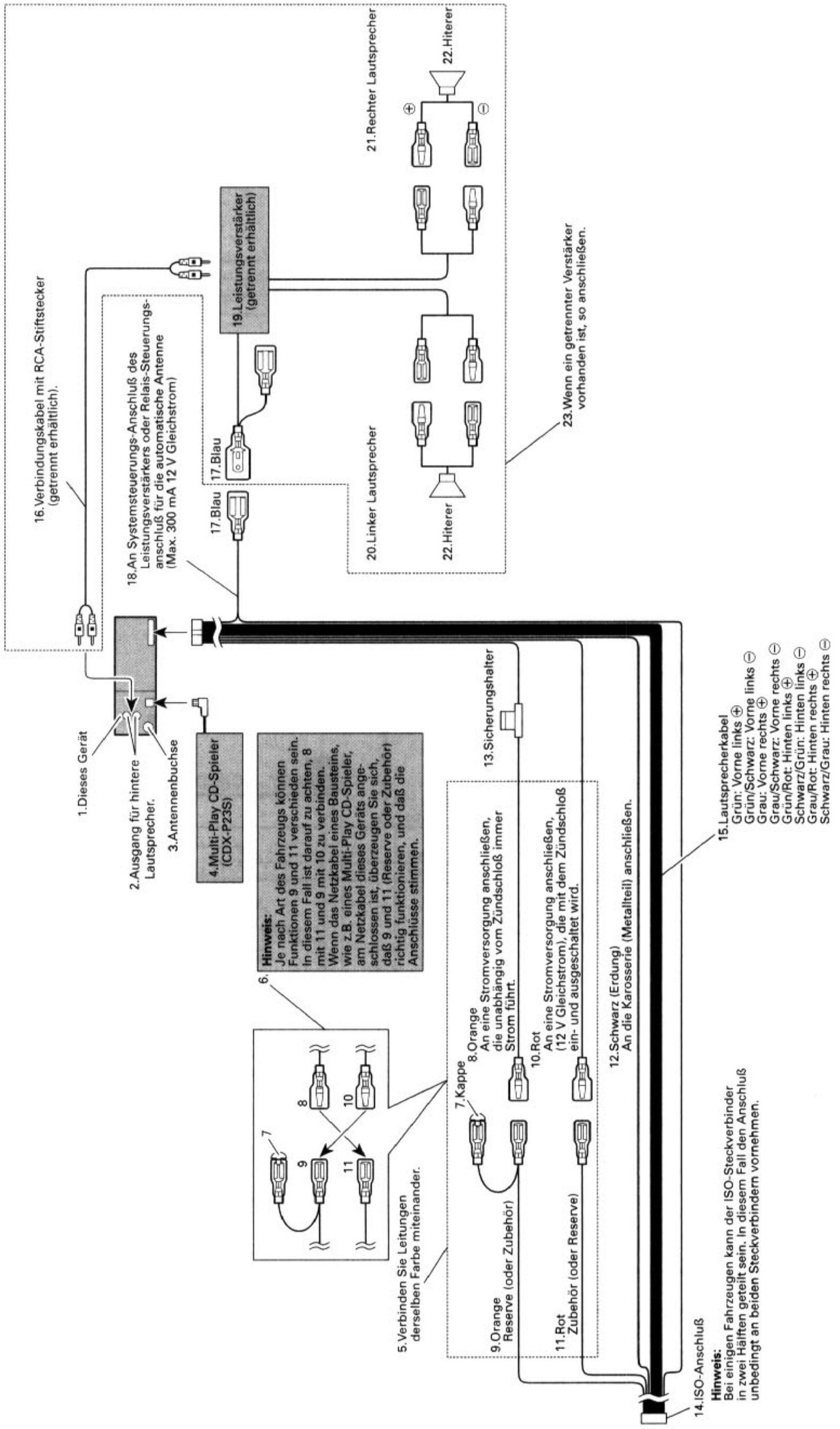

21.Rechter Lautsprecher
22.Hiterer
19.Leistungsverstärker (getrennt erhältlich)
16.Verbindungskabel mit RCA-Stiftstecker (getrennt erhältlich).
18.An Systemsteuerungs-Anschluß des Leistungsverstärkers oder Relais-Steuerungs-anschluß für die automatische Antenne (Max. 300 mA 12 V Gleichstrom)
17.Blau
17.Blau
20.Linker Lautsprecher
22.Hiterer
23.Wenn ein getrennter Verstärker vorhanden ist, so anschließen.
1.Dieses Gerät
2.Ausgang für hintere Lautsprecher.
3.Antennenbuchse
4.Multi-Play CD-Spieler (CDX-P23S)
6. Hinweis:
Je nach Art des Fahrzeugs können Funktionen 9 und 11 verschieden sein. In diesem Fall ist darauf zu achten, 8 mit 11 und 9 mit 10 zu verbinden.
Wenn das Netzkabel eines Bausteins, wie z.B. eines Multi-Play CD-Spieler, am Netzkabel dieses Geräts angeschlossen ist, überzeugen Sie sich, daß 9 und 11 (Reserve oder Zubehör) richtig funktionieren, und daß die Anschlüsse stimmen.
13.Sicherungshalter
7.Kappe
8.Orange
An eine Stromversorgung anschließen, die unabhängig vom Zündschloß immer Strom führt.
10.Rot
An eine Stromversorgung anschließen, (12 V Gleichstrom), die mit dem Zündschloß ein- und ausgeschaltet wird.
12.Schwarz (Erdung)
An die Karosserie (Metallteil) anschließen.
15.Lautsprecherkabel
Grün: Vorne links ⊕
Grün/Schwarz: Vorne links ⊖
Grau: Vorne rechts ⊕
Grau/Schwarz: Vorne rechts ⊖
Grün/Rot: Hinten links ⊕
Schwarz/Grün: Hinten links ⊖
Grau/Rot: Hinten rechts ⊕
Schwarz/Grau: Hinten rechts ⊖
5.Verbinden Sie Leitungen derselben Farbe miteinander.
9.Orange
Reserve (oder Zubehör)
11.Rot
Zubehör (oder Reserve)
14.ISO-Anschluß
Hinweis:
Bei einigen Fahrzeugen kann der ISO-Steckverbinder in zwei Hälften geteilt sein. In diesem Fall den Anschluß unbedingt an beiden Steckverbindern vornehmen.

Fig. 23

KEH-2520R/X1M/GR

Technische Daten

Allgemeines

Stromversorgung ..... 14,4 V Gleichspannung (Toleranz 10,8 – 15,1 V)
Erdungssystem ..... Negativ
Max. Leistungsaufnahme ..... 8,5 A
Abmessungen
(Einbaugröße) ..... 178 (B) × 50 (H) × 150 (T) mm
(Frontfläche) ..... 188 (B) × 58 (H) × 19 (T) mm
Gewicht ..... 1,2 kg

Verstärker

Max. Ausgangsleistung ..... 35 W × 4
Dauer-Ausgangsleistung ..... 22 W × 4 (DIN 45324, +B = 14,4 V)
Lastimpedanz ..... 4 Ω (4 – 8 Ω zulässig)
Klangfarbenregler
(Tiefen) ..... ±12 dB (100 Hz)
(Höhen) ..... ±12 dB (10 kHz)
Loudness-Kontur ..... +10 dB (100 Hz), +7 dB (10 kHz) (Lautstärke: –30 dB)

Cassettenspieler

Band ..... Kompakt-Cassettenband (C-30 – C-90)
Bandlaufgeschwindigkeit
..... 4,76 cm/s (+0.14 cm/s, -0.05 cm/s)
Umspulzeit ..... ca. 90 s für C-60
Gleichlaufschwankungen ..... 0,13% (Effektiv)
Frequenzgang ..... 40 – 14.000 Hz (±3 dB)
Stereotrennung ..... 45 dB
Rauschabstand ..... 52 dB (IEC-A-Netz)

UKW-Tuner

Frequenzbereich ..... 87,5 – 108 MHz
Nutzempfindlichkeit
..... 11 dBf (1,0 µV/75 Ω, Mono, S/N: 30 dB)
50-dB-Geräuschberuhigung
..... 16 dBf (1,7 µV/75 Ω, Mono)
Rauschabstand ..... 70 dB (IEC-A-Netz)
Verzerrungen ..... 0,3% (bei 65 dBf, 1 kHz, Stereo)
Frequenzgang ..... 30 – 15.000 Hz (±3 dB)
Stereotrennung ..... 40 dB (bei 65 dBf, 1 kHz)

MW-Tuner (KEH-2530R, KEH-2500R)

Frequenzbereich ..... 531 – 1.602 kHz
Nutzempfindlichkeit ..... 18 µV (25 dB) (S/N: 20 dB)
Trennschärfe ..... 50 dB (±9 kHz)

LW-Tuner (KEH-2530R, KEH-2500R)

Frequenzbereich ..... 153 – 281 kHz
Nutzempfindlichkeit ..... 30 µV (30 dB) (S/N: 20 dB)
Trennschärfe ..... 50 dB (±9 kHz)

Hinweis:

- Änderungen der technischen Daten und des Designs jederzeit vorbehalten.

KEH-P26R/X1M/GR

Technische Daten

Allgemeines

Stromversorgung ..... 14,4 V Gleichspannung (Toleranz 10.8 – 15,1 V)
Erdungssystem ..... Negativ
Max. Leistungsaufnahme ..... 8,5 A
Abmessungen
(Einbaugroße) ..... 178 (B) × 50 (H) × 150 (T) mm
(Frontfläche) ..... 188 (B) × 58 (H) × 19 (T) mm
Gewicht ..... 1,2 kg

Verstärker

Max. Ausgangsleistung ..... 35 W × 4
Dauer-Ausgangsleistung ..... 22 W × 4 (DIN 45324, +B = 14,4 V)
Lastimpedanz ..... 4 Ω (4 – 8 Ω zulässig)
Preout-Ausgangspegel/
Ausgangsimpedanz ..... 500 mV/1 kΩ
Klangfarbenregler
(Tiefen) ..... ±12 dB (100 Hz)
(Hohen) ..... ±12 dB (10 kHz)
Loudness-Kontur ..... +10 dB (100 Hz), +7 dB (10 kHz) (Lautstärke: –30 dB)

Cassettenspieler

Band ..... Kompakt-Cassettenband (C-30 – C-90)
Bandlaufgeschwindigkeit
..... 4,76 cm/s (+0.14 cm/s, -0.05 cm/s)
Umspulzeit ..... ca. 90 s für C-60
Gleichlaufschwankungen ..... 0.13% (Effektiv)
Frequenzgang ..... 40 – 14.000 Hz (±3 dB)
Stereotrennung ..... 45 dB
Rauschabstand ..... 52 dB (IEC-A-Netz)

UKW-Tuner

Frequenzbereich ..... 87.5 – 108 MHz
Nutzempfindlichkeit
..... 11 dBf (1,0 µV/75 Ω, Mono, S/N: 30 dB)
50-dB-Geräuschberuhigung
..... 16 dBf (1,7 µV/75 Ω, Mono)
Rauschabstand ..... 70 dB (IEC-A-Netz)
Verzerrungen ..... 0,3% (bei 65 dBf, 1 kHz, Stereo)
Frequenzgang ..... 30 – 15.000 Hz (±3 dB)
Stereotrennung ..... 40 dB (bei 65 dBf, 1 kHz)

Hinweis:

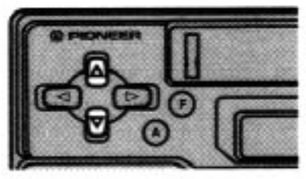
- Änderungen der technischen Daten und des Designs jederzeit vorbehalten.

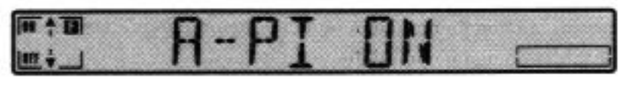
Ausgangseinstellmenü

Umschalten des Auto-PI-Suchlaufs

Während Vorwahlsender-PI-Suchlaufbetriebs können Sie die Auto-PI-Suchlauffunktion ein- und ausschalten.

- **Schalten Sie die Auto-PI-Suchlauffunktion ein oder aus.**

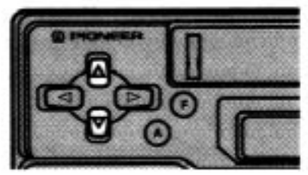




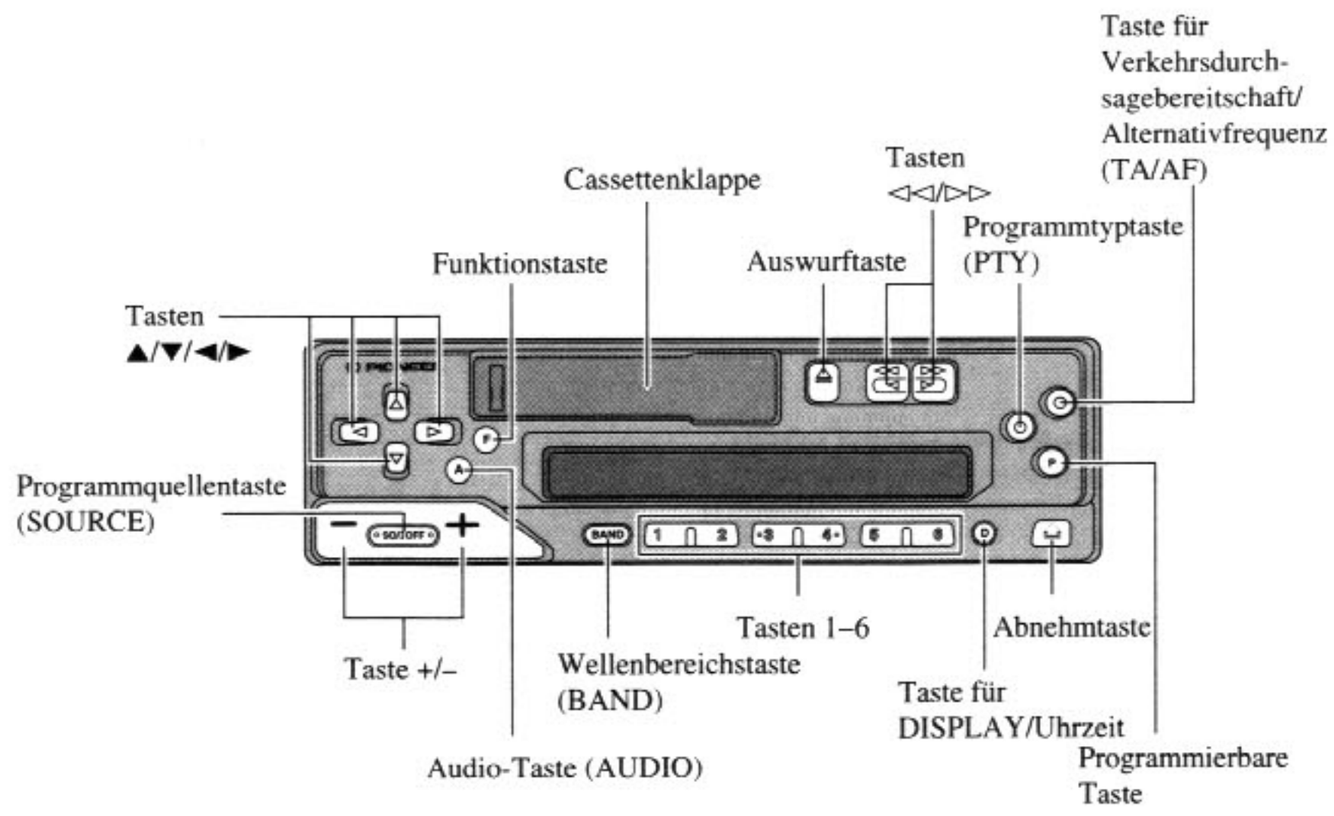
Umschalten der AUX-Betriebsart

Mit diesem Produkt können auch externe Geräte (AUX) verwendet werden.
Aktivieren Sie die Betriebsart AUX, wenn Sie externe Geräte mit diesem Produkt verwenden wollen.

- **Schalten Sie die Betriebsart AUX ein oder aus.**

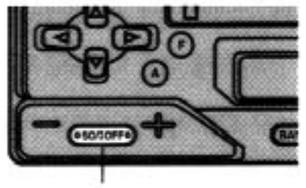


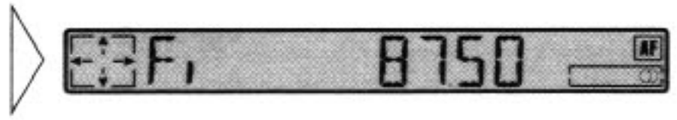
Tastenübersicht



Grundlegender Tuner-Betrieb

1. **Tuner wählen.**





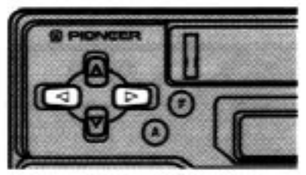
Die Programmquelle ändert sich mit jedem Druck ...

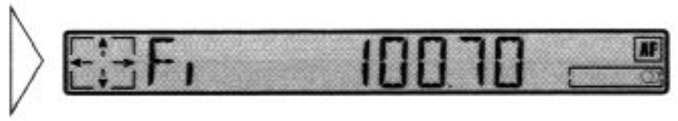
Der Programm-Service-Name oder die Frequenz erscheint im Display.
(Bei Empfang eines Stereo-Senders leuchtet die Anzeige "◯".)

2. **Wählen Sie den gewünschten Wellenbereich.**

FI → FII → FIII

3. **Stimmen Sie den Receiver auf eine höhere oder tiefere Frequenz ab.**





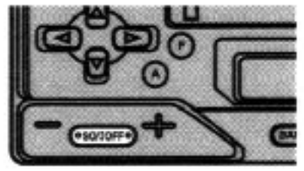
Der Tuner dieses Geräts gestattet Ihnen die Wahl der Abstimmung durch Ändern der Zeit, während der Sie die Taste drücken.

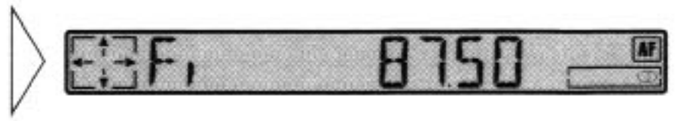
Manuelle Abstimmung (Schritt für Schritt)	0,3 Sekunden oder weniger
Suchlauf-Abstimmung	0,3 – 2 Sekunden
Manuelle Abstimmung (fortlaufend)	2 Sekunden oder mehr

Hinweis:
- Zur Wahl eines schwachen Rundfunksenders, der mit der Suchlauf-Abstimmfunktion nicht einstellbar ist, benutzen Sie das manuelle Abstimmverfahren.

Einschalten

- **Wählen Sie die gewünschte Programmquelle (wie z.B. Tuner).**



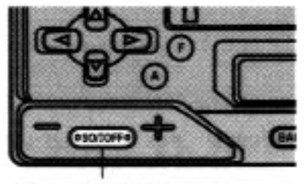


Mit jedem Druck auf die Taste SOURCE wird die Programmquelle in der nachstehenden Reihenfolge gewählt:
Tuner → Tape → Multi-CD player → AUX

Hinweis:
- In den folgenden Fällen ändert sich die Programmquelle nicht:
  * Kein Multi-CD-Player ist an diesem Gerät angeschlossen.
  * Es befindet sich keine Cassette im Gerät.
  * Es befindet sich kein Magazin im Multi-CD-Player.
  * AUX (externer Eingang) ist ausgeschaltet (OFF).

Ausschalten

- **Die Programmquellen ausschalten.**

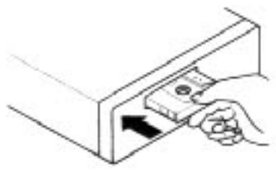


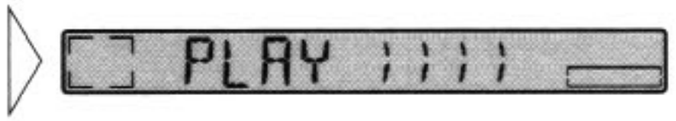
1 Sekunde lang gedrückt halten

Gebrauch des Cassettenspielers

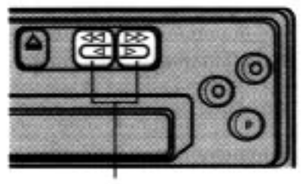
Grundlegender Betrieb des Cassettenspielers

1. Schieben Sie eine Cassette ein.

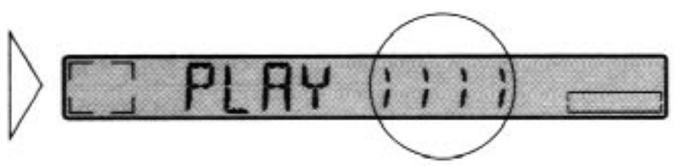




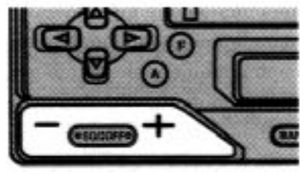
2. Wählen Sie Wiedergabe von Seite A oder B.



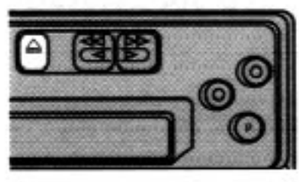
Gleiche Zeit

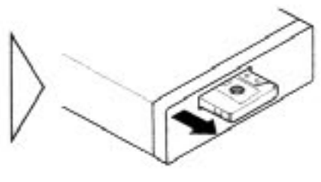


3. Stellen Sie die Lautstärke wunschgemäß ein.



4. Entfernen Sie die Cassette.





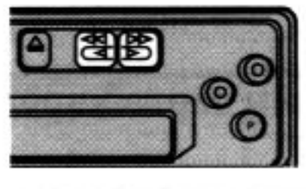
Hinweis:
- Der Cassettenbetrieb kann bei eingeschobener Cassette ein- und ausgeschaltet werden. (Siehe Seite 47.)

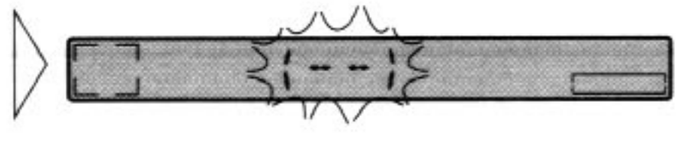
Schneller Vorlauf/Rückspulung

■ Schneller Vorlauf

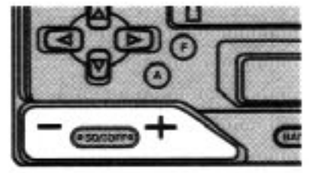
Während "<-->" angezeigt wird, spult das Gerät das Cassettenband schnell bis zum Ende der momentanen Seite.

- **Drücken Sie hierzu die Taste für dieselbe Richtung wie die Bandwiedergabe-Anzeige.**

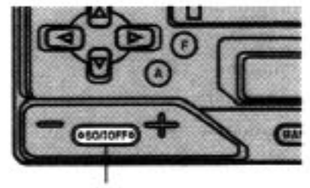




4. Erhöhen oder senken Sie die Lautstärke.



5. Schalten Sie die Programmquelle aus. (Siehe Seite 47.)

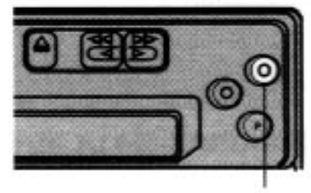


1 Sekunde lang gedrückt halten

AF-Funktionsumschaltung

Die AF-Funktion dieses Produkts kann ein- und ausgeschaltet werden. AF sollte für normalen Abstimmbetrieb ausgeschaltet werden.

- **Schalter AF ausgeschaltet (OFF).**



2 Sekunden lang gedrückt halten

"AF" verschwindet

Zum Einschalten von AF wiederholen Sie das obige Verfahren.

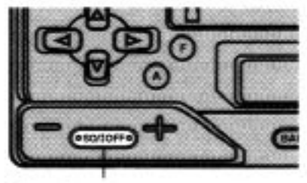
Hinweis:
- Die AF-Funktion kann auch im Funktionsmenü ein- und ausgeschaltet werden.

Gebrauch eines Multi-CD-Players

Mit diesem Gerät kann ein CDX-P23S gesteuert werden.

Grundlegender Betrieb eines Multi-CD-Players

1. Wählen Sie die Multi-CD-Player-Programmquelle. (Siehe Seite 47.)

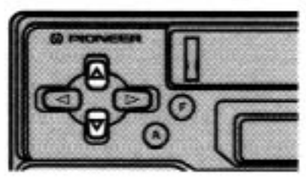


Die Programmquelle ändert sich mit jedem Druck ...

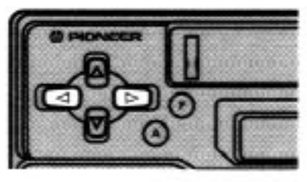
Hinweis:

- Der Multi-CD-Player kann einen vorbereitenden Betriebsschritt durchführen, wie z.B. Überprüfung des Vorhandenseins einer Disc oder Lesen der Disc-Information, wenn der Strom eingeschaltet oder eine neue Disc für Wiedergabe gewählt wird. "READY" wird angezeigt.
- Wenn der Multi-CD-Player nicht richtig funktionieren kann, wird eine Fehlermeldung, wie z.B. "ERROR 14", angezeigt. Siehe Bedienungsanleitung für den Multi-CD-Player.

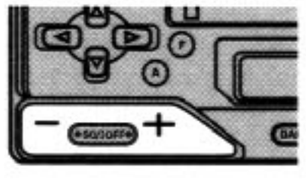
2. Wählen Sie die gewünschte Disc.



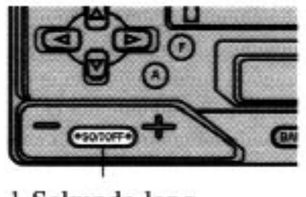
3. Schalten Sie Titel für Titel vorwärts oder rückwärts.



4. Stellen Sie die Lautstärke wunschgemäß ein.



5. Schalten Sie die Programmquelle aus. (Siehe Seite 47.)

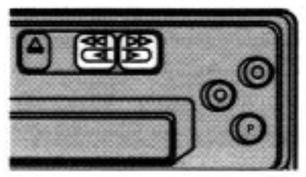


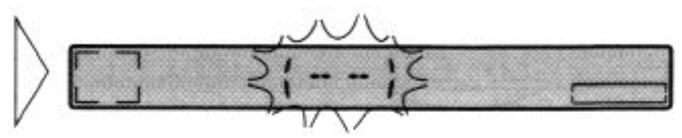
1 Sekunde lang gedrückt halten

■ **Rückspulung**

Während "<-->" angezeigt wird, spult das Gerät das Cassettenband zum Anfang der momentanen Seite zurück.

- **Drücken Sie hierzu die Taste für die entgegengesetzte Richtung wie die Bandwiedergabe-Anzeige.**

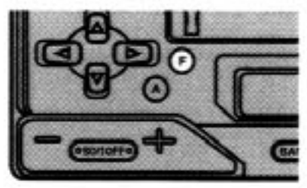




Aufrufen des Funktionsmenüs

In diesem Menü können Sie die Bandfunktionen wählen.

- **Wählen Sie die Radio-Zwischenempfang-Betriebsart im Funktionsmenü.**



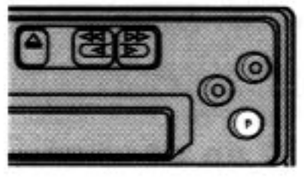
Hinweis:

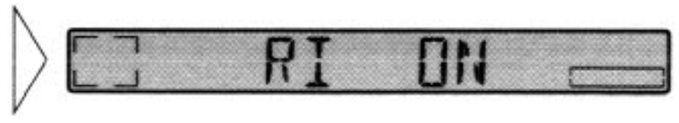
- Durch Drücken der Taste BAND können Sie das Funktionsmenü verlassen.
- Wenn Sie innerhalb von etwa 30 Sekunden nach Wahl des Funktionsmenüs keinen Bedienungsschritt vornehmen, wird das Funktionsmenü automatisch aufgehoben.
- Das Cassetten-Funktionsmenü dieses Geräts ermöglicht nur Radio-Zwischenempfang-Ein-/Ausschaltung. Wenn die Funktionstaste 2 Sekunden oder länger gedrückt, und die Einstellbetriebsart der programmierbaren Taste gewählt wird, kann die Radio-Zwischenempfang-Betriebsart-Einstellung im voraus gewählt werden. Umschaltung zwischen dem Einschaltzustand (ON) und Ausschaltzustand (OFF) ist jedoch mit der programmierbaren Taste nicht möglich.
- Die Einstellbetriebsart für die programmierbare Taste kann durch Drücken der Taste BAND aufgehoben werden.

Radio-Zwischenempfang

Diese Funktion ermöglicht Rundfunkempfang während Umspulbetriebs.

- **Schalten Sie die Radio-Zwischenempfang-Betriebsart ein.**





Zum Ausschalten der Radio-Zwischenempfang-Betriebsart wiederholen Sie das obige Verfahren.

Hinweis:

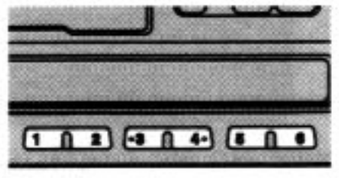
- Die Radio-Zwischenempfang-Betriebsart kann auch im Funktionsmenü ein- und ausgeschaltet werden.

Gebrauch eines Multi-CD-Players

Disc-Nummer-Suche

Sie können Discs direkt mit den Tasten 1 bis 6 wählen. Drücken Sie einfach die Zifferntaste, die der Disc entspricht, die Sie hören wollen.

- **Wählen Sie die gewünschte Disc. (Z.B.: Drücken Sie Taste 3.)**



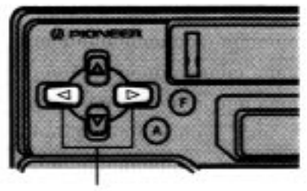
Titelsuche und Schnellverstellung (vorwärts/rückwärts)

Dieses Gerät bietet Ihnen nicht nur eine praktische Titel-Suchfunktion, sondern auch die Möglichkeit, Titel schnell in Vorwärts- oder Rückwärtsrichtung zu durchlaufen, um einen bestimmten Abschnitt aufzufinden.

■ Titelsuche

Diese Funktion ermöglicht Ihnen, zum nächsten oder vorigen Titel zu springen.

- **Titel für Titel rückwärts oder vorwärts.**

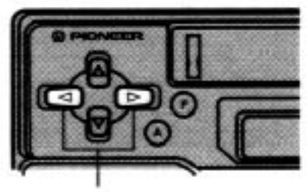


Eine halbe Sekunde oder kürzer gedrückt halten

■ Schnelle Vor-/Rückverstellung

Dank dieser Funktion können Sie Titel schnell in Vorwärts- oder Rückwärtsrichtung verstellen.

- **Rückwärts- oder Vorwärtsverstellung durch Titel.**



Gedrückt halten